

CHAPTER 4 - ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 presents the likely direct, indirect, and cumulative impacts on the human and natural environment in terms of environmental, social, and economic consequences that are projected to occur from implementing the alternatives presented in Chapter 2. Because the alternatives generally describe overall management emphasis, the environmental consequences are most often expressed in comparative general terms. This chapter is organized by topic, such as air quality, cultural resources, and water, similar to Chapter 3. Each topic area includes a method of analysis (indicators, methods, and assumptions), a summary of impacts common to all alternatives, followed by an analysis of impacts on the topic area from the four alternatives. In addition, impacts from the reasonable foreseeable development (RFD) scenarios for fluid mineral leasing are provided. Appendix H provides the RFDs for oil and gas and geothermal. Only management programs with impacts are discussed. Separate sections describing irretrievable or irreversible commitment of resources and unavoidable adverse impacts are presented at the end of the chapter.

Impact analyses and conclusions are based on interdisciplinary team knowledge of the resources and the planning area, information provided by experts in the BLM or in other agencies, and information contained in pertinent existing literature. The baseline used for the impact analysis is the current condition or situation, as described in Chapter 3, Affected Environment. Analysis assumptions have also been developed to help guide the determination of effects (see Analytical Assumptions). Because the draft RMP/EIS provides a broad management framework, the analysis in this chapter represents best estimates of impacts because exact locations of development or management are often unknown. Impacts are quantified to the extent practical with available data. In the absence of quantitative data, best professional judgment provides the basis for the impact analysis.

4.1.1 Analytical Assumptions

Several assumptions were made to facilitate the analysis of the projected impacts. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur within the planning area over the planning horizon. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative and described in Chapter 2. The following lists the general assumptions applicable to all resource categories. Any specific resource assumptions are provided in the methods of analysis subheading for that resource.

- The discussion of impacts is based on the best available data. Knowledge of the planning area and professional judgment, based on observation and analysis of conditions and responses in similar areas, are used to infer environmental impacts where data is limited;
- Acreage figures and other numbers used in the analyses are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations;
- The approximate acres of forest vegetation to be treated under each alternative may vary by as much as ten percent. Based on estimated occurrence of cover types, the approximate acres of treatment under each alternative would be:

4. Environmental Consequences

<u>Alternative</u>	<u>Total</u>	<u>Dry Conifer</u>	<u>Wet/Warm</u>	<u>Wet/Cold</u>
A	7,000	2,520	700	3,780
B	9,600	3,430	975	5,195
C	1,200	429	122	649
D	8,200	2,930	833	4,437

- Since the potential for development of leasable minerals and geothermal resources within the planning area is so low, no environmental effects from such developments are anticipated;
- Recreational use of public lands will continue to increase, regardless of management direction. Recreation management designations (special recreation management areas) do not increase visitations, rather they are responses to uses that are already occurring or that are likely to occur in the future. The purpose of designations is to improve recreational experiences and mitigate impacts on other resources;
- Impacts on paleontological resources are not anticipated under any alternative. The geologic units present in the planning area generally have little fossil potential due to composition and great age;
- Actions undertaken by private persons and entities are assumed to be captured in the information made available by such agencies; and
- Mitigation measures developed during analysis of project-level implementation, not described in the alternatives, may reduce, minimize, or even eliminate impacts described in this chapter.

4.1.2 Types of Effects (Direct, Indirect, and Cumulative)

Direct, indirect, and cumulative impacts are considered in the effects analysis, consistent with direction provided in 40 CFR 1502.16. Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place. Indirect impacts result from implementing an action or alternative but are usually later in time or removed in distance and are reasonably certain to occur. Direct and indirect impacts are described in terms of duration (short-term, long-term), intensity (negligible, minor, moderate, or major), and context (local, regional, national). Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR Part 1508.7). Guidance for implementing NEPA (Public Law 91-190, 1970) requires that federal agencies identify the timeframe and geographic boundaries within which they will evaluate potential cumulative effects of an action and the specific past, present, and reasonably foreseeable actions and events that will be analyzed. Effects of past actions and activities on resources are manifested in the current condition of the resource, which is described in Chapter 3 (Affected Environment) for resources on BLM-administered lands. The list of actions used for cumulative impact analysis is provided below under Actions and Events That Make up the Cumulative Impact Scenario (Section 4.1.3.3).

Effects are quantified where possible, primarily by using mapping data through a geographical information system. In the absence of quantitative data, best professional judgment prevailed; impacts are sometimes described using ranges of potential impacts or in qualitative terms.

Terms referring to impact duration are used in the effects analysis. The standard definitions for these terms are as follows:

Localized Impact: The impact occurs in a specific site or area. When comparing changes to existing conditions, the impacts are detectable only in the localized area.

Short-Term Effect: The effect occurs only while the alternative is being implemented.

Long-Term Effect: The effect could occur for an extended period after the alternative has been implemented. The effect could last several years or more and could be beneficial or adverse.

Definitions for impact terms describing intensity and context are provided, when appropriate.

4.1.3 Cumulative Impacts

4.1.3.1 Cumulative Impact Assessment Methodology

This cumulative assessment is a programmatic, broadscale, qualitative assessment. The BLM makes both land use planning and implementation decisions. Examples of planning decisions include land use allocations, special designations, and determining which lands would be open or available for certain uses, such as off-highway vehicle use. Examples of implementation decisions include designating routes for motorized or nonmotorized vehicle travel, specific recreation facilities, and actions that may be taken without preparation of additional environmental documentation. Implementation decisions generally constitute BLM's final approval allowing on-the-ground actions to proceed and are put into effect by developing implementation (project-specific or activity-level) plans.

The land use planning-level decisions that BLM will make regarding this RMP are programmatic decisions based on analysis that can only be conducted on a broad scale. Because of the broad scope, impact analysis of planning-level decisions is provisional with respect to project-specific activities. Subsequent planning and documentation for events and actions tiered to this RMP would generally be subject to a greater level of NEPA assessment and compliance. Such planning and documentation would pertain to project- and activity-level plans, and are more definitive than plans found in an RMP. A project-specific plan is typically prepared in detail for an individual action or event; whereas, an activity-level plan typically describes integrated, multiple use actions and events for an area within the planning area. Project-level plans (such as a stream restoration project) contain specific proposed actions, and site- or area-specific analysis is conducted. Activity plans are generally site-specific but have traditionally focused on single resource programs (such as mining). Activity plans may contain information that is as detailed or as specific as a project-level plan.

A cumulative impact analysis is based on numerous assumptions. The Council on Environmental Quality (CEQ) guidance limits cumulative impact analysis to important issues of national, regional, or local significance. Therefore, this cumulative impact assessment focuses only on actions and impacts that would potentially be significant. Because of the wide geographic scope of a cumulative impact assessment and the variety of activities assessed, cumulative impacts are commonly examined at a more qualitative and less detailed level than are direct and indirect impacts.

4.1.3.2 Actions and Events That Make Up the Cumulative Impact Scenario

For purposes of this EIS, the cumulative impact assessment timeframe considers information available from 1980 to 2005, except where additional past data are available. This encompasses a range within which data are generally reasonably available and forecasts can be reasonably made. Actions have only been considered to the extent possible. This analysis is provided for each resource and is general because decisions about other actions in the planning area would be made by many public and private entities, and the location, timing, and magnitude of these actions are not well known.

4. Environmental Consequences

The geographic area of primary concern is composed of the five Idaho counties in which the Field Office is located: Benewah, Bonner, Boundary, Kootenai, and Shoshone Counties. Actions and events outside this five-county area, however, are also considered if they have the potential to affect resources with broad regional importance. Resources also have the potential to be affected differently by actions and events depending upon whether they occur on BLM-administered lands, or on other federal, state of Idaho, or private lands.

Public scoping, internal scoping, public documents, and data prepared by federal, state, and local government agencies are the primary information sources for past, present, and reasonably foreseeable future actions for consideration in cumulative impact analysis.

Scoping for this project did not identify any need to exhaustively list individual past actions or analyze, compare, or describe the environmental effects of individual past actions. However, the Idaho Panhandle National Forest Plan revision EIS, once complete, could call for some additional specific actions. Given that much of the Idaho Panhandle National Forest planning area is within the CdA FO planning area, these actions are included in the cumulative assessment, as applicable.

Actions undertaken by private persons and entities are assumed to be captured in the information made available by such agencies. Specific actions and events with the potential to cumulatively affect the resources evaluated (e.g., water resources, vegetation) are identified in Table 4.1.3-1. Actions and events included in the cumulative impact analysis do not affect all resources equally. Some resources would be affected by several or all of the described activities, while others would be affected very little or not at all. Cumulative impact analyses are presented in this chapter by resource topic. The actions and events that make up the cumulative impact scenario (Table 4.1.3-1) were analyzed in conjunction with the impacts of each alternative to determine if they would have any additive or interactive effects on a particular resource.

The timeline for looking at future actions is 20 years, which will encompass all long-term effects from management actions proposed in this plan, while providing a wide scope to capture likely actions and events that could be considered in the future. Actions include those initiated by private, state, and federal entities, along with any environmental trends or conditions that could have a cumulative impact. The geographic scope for analysis may vary by resource type or use, but unless otherwise discussed, the area for consideration is generally northern Idaho, including lands within the Bureau of Land Management's adjacent CFO. The analysis is provided for each resource/program area and is general because decisions about other actions in the planning area would be made by many public and private entities, and the location, timing, and magnitude of these actions are not well known. Actions considered in the cumulative effects analysis include the following:

Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

Land tenure actions since 1981:

- have resulted in reducing the total area of public lands managed by the Coeur d'Alene Field Office from approximately 136,000 acres to 96,770 acres, a 29 percent decrease;
- have resulted in increasing the total area of public lands managed by the Cottonwood Field Office (CFO) from approximately 134,417 acres to 143,826 acres, a 7 percent increase;

Land tenure actions of various sizes are occurring and will continue to occur to consolidate BLM-administered lands and facilitate management.

Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

Idaho Statewide Implementation Strategy for the National Fire Plan. The Idaho Department of Lands, in conjunction with the BLM and other federal agencies, signed the Idaho Statewide Implementation Strategy for the National Fire Plan. The implementation plan focuses on fire prevention and suppression, hazardous fuels reduction, restoration of fire-adapted ecosystems, and the promotion of community assistance in fire management (Idaho Department of Lands 2002). The CFO Fire Management Plan and the Coeur d'Alene Field Office Fire Management Plan were completed in 2004.

During 2002, Idaho Department of Lands, in cooperation with federal agencies, disbursed \$1.9 million to wildland-urban interface projects and development of defensible space. Additional money was used for hazardous fuels reduction programs for several communities. Between 2002 and 2005, all planning area counties completed community wildland fire protection plans that identify wildland-urban interface (WUI) areas. The development of wildland fire mitigation plans allows counties and communities to determine their current fire hazard risk and to develop effective mitigation to minimize wildland-urban risks to persons and property. In addition, implementing community-based fuels reduction programs gives private landowners opportunities to work with public land management agencies to manage the wildland-urban interface.

Wildland fires:

- Have been suppressed over the past 100 years;
- Have burned low amounts of acreage in the Upper Columbia River Basin through the mid-1900s, with an increasing and noticeable trend in increased fire size between 1985 and 1995 (Forest Service and BLM 1997);
- Burned three million acres of virgin timberland in western Montana and northern Idaho including removing most vegetation in the eastern portion of the planning area, during the fire of 1910, the largest forest fire in US history (Idaho Forest Products Commission 2005);
- Have occurred and will continue to occur over time, and although the number of fire starts on BLM land is relatively small, land ownership in northern and north-central Idaho is fragmented, which increases the potential for fires to cross administrative boundaries and affect BLM-managed lands; and
- Are suppressed and will continue to be suppressed to reduce the risk to resource values, private property, and human safety.

Fuels treatments, including prescribed fire, chemical and mechanical treatment, and seeding, have affected vegetation. Fuels treatments, including these methods and wildland fire use, are expected to increase, potentially affecting vegetation, soil, air, and water resources and reducing hazardous situations.

Natural cyclic insect and disease activity have persisted and will continue to persist in forested stands and rangelands, including bark beetle infestations and root rot in forested stands and grasshoppers in rangelands. Blister rust will continue to cause mortality in natural western white pine and western white bark pine.

Fish and Wildlife. Populations of some fish and wildlife species are declining in the Pacific Northwest. Declining wildlife and fish species will likely receive increased federal and state agency conservation efforts.

Listings under the Endangered Species Act. Some flora and fauna species have declined to the level where listing under the Endangered Species Act became necessary. The *Draft Environmental Impact Statement (EIS) for Northern Rockies Lynx Amendment*, which assesses guidelines for management of Canada Lynx on certain lands under the authority of the Forest Service and BLM, was completed in 2004. The final EIS (FEIS) and record of decision (ROD) will be issued in Summer 2006. Potential listings under the Endangered Species Act may occur

Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

in the foreseeable future if populations of selected species continue to decline; species that may have more potential for listing than other species may include federally listed candidate species and BLM sensitive species. Species, such as the bald eagle and gray wolf, will likely be delisted.

Livestock Grazing. Domestic livestock (cattle, sheep, and horses) have grazed and will continue to graze most of the area, including BLM-administered lands, Nez Perce and Coeur d'Alene Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands.

- Approximately one percent of forage comes from federal lands (BLM and Forest Service) in all counties of the planning area, except for Shoshone County, where approximately 12 percent of forage comes from federal lands (Forest Service and BLM 1997).
 - In the Cottonwood planning area, approximately 24 percent of forage comes from federal lands in Adams County, 4 percent in Clearwater County, 6 percent in Idaho County, 8 percent in Latah County, and less than 1 percent in Lewis and Nez Perce Counties (Forest Service and BLM 1997).
 - The North Idaho Range Management Program Plan was completed in 1982. In general, the number of livestock grazing permits/leases issued by the BLM in Idaho has gradually declined over the last several decades, while the number of authorized AUMs has increased slightly or remained roughly the same (Tetra Tech Inc. 2005a, 2005d).
 - In the CFO, 67 percent of grazing allotments are small isolated tracts that are surrounded by large blocks of private lands, typically ranches. The BLM cannot control the season of use or the number of AUMs removed from public lands on isolated tracts;
 - The BLM will continue to assess all livestock use allotments in Idaho with use of the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management. These standards are designed to provide resource measures and guidance needed to ensure healthy, functional rangelands. Livestock use allotments are evaluated to determine if standards and guidelines are being met or if significant progress toward meeting them is being achieved. If standards are not being met, the BLM is required to make changes that would help achieve these standards in the future.
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Timber has been and is harvested on:

- Private lands, for which data are unavailable, except for Bennett Lumber Products in the Cottonwood planning area, which harvested 82 MMBF (in 1999);
 - State of Idaho lands within planning area (Priest Lake, Kootenai Valley, Pend Oreille, Mica, Cataldo, and St. Joe Supervisory Areas), an average of 85 MMBF were sold annually from 1999 to 2004 (Idaho Department of Lands 2003, 2005), 73 MMBF was planned for harvest in 2006 and 93 MMBF was planned in 2007; within the CFO planning area (Ponderosa, Clearwater, Maggie Creek, and Craig Mountain Supervisory Areas), an average of 52 MMBF were sold from 1999 to 2004, 51 MMBF was planned in 2006, and 80 MMBF was planned in 2007 (Idaho Department of Lands 2006) (historical data does not include cedar poles, and 2005 data are not available as of May 12, 2006);
 - BLM-administered lands: The volume offered by the Coeur d'Alene Field Office ranged from 4 to 8 MMBF until 1992; thereafter the annual volume offered ranged from 2 to 4 MMBF. The CFO sold between 2 and 8 MMBF annually (total from 1992 to 2004);
 - Clearwater National Forest lands: 1,479 MMBF (total from 1980 to 2002) on 1.8 million acres;
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Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

- Payette National Forest lands: 1,301 MMBF (total from 1980 to 2004) on 2.3 million acres;
- Nez Perce National Forest lands: 1,387 MMBF (total from 1980 to 2004) on 2.2 million acres; and
- Idaho Panhandle National Forest lands: approximately 5,150 MMBF on 2.5 million acres (total from 1980 to 2003) (Forest Service 2003).

A sharp decline in timber sales from National Forests in Idaho has occurred over the past 15 years. Thirty-six mills permanently closed from 1989 to 2001, and many of them do not plan to reopen (Tetra Tech Inc. 2005a).

Based on current trends in the forestry industry, such as the ongoing temporary layoffs induced by mill closures, similar declines are expected to continue within counties of the Cottonwood planning area in the future unless the government allows for more harvesting on public lands or enacts greater protective measures on the timber industry as a whole (Idaho of Commerce and Labor 2004). Idaho County would suffer the greatest impact if the timber industry continues to decline. However, harvests from private timberlands have increased as a result (Forest Service 2003).

Mineral development has occurred continuously in the region for over 140 years. Mining has occurred and continues to occur on BLM-administered lands, Nez Perce and Coeur d'Alene Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, and Nez Perce National Forest lands.

- In the planning area, the Coeur d'Alene Mining District stretches over 22 miles from Mullan on the east to Smelterville on the west along the south fork of Coeur d'Alene River. Silver is the primary commodity produced in the Silver Valley, which has made the Coeur d'Alene Mining District the largest silver district in the world, with over one billion ounces recorded.
- In the Coeur d'Alene Field Office, Benewah and Shoshone Counties' contribution of federal mineral revenues constitute a small percentage of Idaho's total and, since 2001, have diminished in royalty value, and thus returned payments, through 2004 (Tetra Tech Inc. 2005b).
- In the CFO, Clearwater, Idaho, and Latah Counties' contribution of federal mineral revenues constitute a small percentage of the state's total and, since 2001, have diminished in royalty value and, therefore, diminished returned payments, up through 2004 (Tetra Tech Inc. 2005c).
- In the Silver Valley of the planning area, two silver-based metal mines operate at a low level due to commodity prices.
- In the Cottonwood planning area, development of various industrial minerals, including sand, gravel, and aggregate, dimension stone, and limestone, is expected to continue to expand or contract in response to urban growth and construction in Idaho (Parker 2002).
- In the Silver Valley of the planning area, silver-based metal mines will operate at levels commensurate with commodity prices.
- In the Silver Valley of the planning area is the Bunker Hill/Coeur d'Alene Basin Superfund Site, which is approximately 40 miles east of Coeur d'Alene. The site is 21 square miles including a 365-acre abandoned industrial complex of the former Bunker Hill Company lead/zinc mine smelter and five main communities, including the cities of Kellogg, Wardner, Smelterville, Page, and Pinehurst.

Minerals. In the Cottonwood and Coeur d'Alene Field Offices (on BLM-administered lands), the reasonably foreseeable development of mineral resources is as follows:

4. Environmental Consequences

Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

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- Oil and Gas – Activity over the next 15 to 20 years would continue to be low, with the issuance of one or two geophysical surveys and perhaps the drilling of one or two exploratory holes. No field development is expected.
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- Geothermal Resources – No geothermal resources have been identified, so the potential for developing geothermal resources is low. It is estimated that one or two exploratory wells would be plugged and abandoned.
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- Solid Minerals – The potential for the occurrence of solid leasable minerals (both energy and nonenergy) has been rated as low to zero. No future activity is anticipated.
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- Salable Mineral Resources – It is anticipated the need for salable minerals (primarily sand, gravel, and crushed rock) will increase due to the continued urbanization of northern Idaho. Decorative stone sales to individuals are expected to increase.
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- Locatable Mineral Resources:
 - In the CFO, the major commodity of interest would continue to be gold. Both placer mining and the development of underground lode deposits are anticipated. There is a possibility that at least one chemical heap-leaching operation would be permitted on BLM land northwest of Elk City.
 - In the Coeur d'Alene Field Office, the major commodities of interest would continue to be the precious metals gold and silver. The other possible commodity of interest could be an uncommon variety of building stone; however, none have been identified in the planning area. No chemical heap-leaching operations are forecasted.
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Road construction has occurred in association with timber harvesting and mining on BLM-administered lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands. The rate of road building has recently slowed and stabilized due to less harvesting and mining activity on National Forest and BLM lands when compared with 20 to 30 years ago. This activity is expected to continue at the current steady rate on BLM-administered and National Forest lands; the future rate is unknown on private and State of Idaho lands.

Population:

- Idaho's population has risen approximately 29 percent between 1990 and 2000, while the population of the Cottonwood planning area has grown an average of 13 percent (Idaho Commerce and Labor 2004), and the population of the Coeur d'Alene Field Office planning area has grown an average of 41 percent (US Census Bureau 2004). In the Coeur d'Alene Field Office planning area, the fastest growing counties, Kootenai County (in which the cities of Coeur d'Alene and Post Falls are located) and Bonner County (in which the city of Sandpoint is located), have increased 56 percent and 38 percent, respectively (US Census Bureau 2004). The City of Spokane's population has grown 10 percent in the past decade.
 - In the Cottonwood planning area, population growth is projected to continue slowly: Between 2000 and 2020, the planning area population is anticipated to grow 11 percent, while Idaho's population is anticipated to grow 35 percent (US Census Bureau 2004).
 - In the Coeur d'Alene Field Office planning area, population is anticipated to grow 36 percent between
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Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

2000 and 2020, which is slightly more than the state's anticipated growth of 35 percent (US EPA 2004a). Counties containing the city of Sandpoint (Bonner County), Bonners Ferry (Boundary County), and greater Spokane metropolitan area (Kootenai County) are expected to grow the most, 39 percent, between 2000 and 2020.

Recreation has increased, and use patterns and motorized technology have changed.

- Recreation-related visits to Idaho are estimated to continue to increase at an annual rate of one to four percent (Tetra Tech Inc. 2005a, 2005d).
- Recreational activities will continue to contribute to soil impacts.
- An increase in the use of developed recreation sites and campgrounds is likely as the population increases.

Invasive species have invaded the CdA and Cottonwood planning areas and have been transported by wind, humans, machinery, and animals (pets, livestock, and wildlife). Cooperative weed management activities exist among the counties, private landowners, and government agencies. However, noxious weed invasion is increasing and will continue, potentially increasing treatment efforts.

Tribal Coordination. Coordination with the Coeur d'Alene Tribe, Kootenai Tribe of Idaho, Kalispel Tribe of Indians, Confederated Salish, and Kootenai Tribe in Montana has ensured and will continue to ensure that land management decisions and activities do not affect treaty rights and tribal interests.

Clean Air Act. US EPA is likely to set PM_{2.5} standards under the Clean Air Act. Air quality in the Cottonwood and Coeur d'Alene planning areas is seasonally affected by agricultural field burning and wildland fires.

Water Quality. Human activities, such as timber harvesting, livestock grazing, agriculture, OHV use, and mining (especially in the Silver Valley within the Coeur d'Alene Field Office planning area) have contributed to water quality limited streams and will continue to contribute to poor water quality in some streams.

State of Idaho Department of Environmental Quality has established Total Maximum Daily Loads for some 303(d) water quality limited streams in the planning areas (in 2000, 2004, and 2005). Total Maximum Daily Loads for the remaining 303(d) water quality limited streams in the planning areas will be established by 2007. The BLM has limited opportunity to significantly improve water quality because of several factors, including location and distribution of lands under its management and the amount of land managed within watersheds with impaired water quality.

Access has been restricted to BLM lands by some private landowners and is likely to be increasingly restricted. The demand for access to public lands has increased and will continue to increase with growth in population and recreational use.

Archaeological investigations, illegal activities (e.g., cultural resource site vandalism or collecting), and development and maintenance activities (e.g., grazing, mining, recreation use, OHV use) that adversely affect sites have occurred and will continue to occur.

ICBEMP. The Forest Service/BLM Interior Columbia Basin Ecosystem Management Project/Strategy (ICBEMP), an extensive study of the Interior Columbia Basin, was developed in 1997 to develop a scientifically sound and ecosystem-based strategy for management of all BLM and National Forest lands in the Interior Columbia River basin. The ICBEMP was charged with developing a scientifically based broadscale ecosystem management strategy that may potentially alter the management direction on over 60 million acres of lands

Table 4.1.3-1 Actions and Events That Contribute to the Cumulative Impact Scenario

administered by the Forest Service and BLM. This study determined that some ecosystems are at risk due to several past and existing impacts. To address these risks, the BLM entered into a 2003 Memorandum of Understanding to implement the ICBEMP. The implementation strategy includes direction to federal agencies to update or develop land use plans to provide direction to address the following:

- Maintain and promote a healthy, productive, and diverse ecosystem and restore, through a system of prioritization, areas that are degraded;
 - Develop an integrated mix of restoration activities to provide for repatterning succession and disturbance regimes and achievement of sustainable landscape conditions, thereby contributing to the reduction of events such as uncharacteristically large and severe wildland fires;
 - Restore natural disturbance patterns in watersheds and hydrologic process to help restore and maintain riparian, aquatic, and wetland habitat;
 - Develop integrated weed management strategies; and
 - Develop a coordinated multiscale and interagency approach to planning and decision making.
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Coeur d'Alene RMP. The BLM is developing an RMP to replace the Emerald Empire MFP (BLM 1981). The RMP will incorporate the fire, fuels, and related vegetation management direction resulting from the Fire Management Direction Amendment (above). It also will incorporate long-term management strategies to replace interim INFISH (Forest Service Inland Native Fish Strategy) guidance, which was developed in 1995 as interim strategies for managing fish-producing watersheds pending completion of the RMP.

Cottonwood RMP. The BLM is developing an RMP that will guide management of BLM lands directly adjacent and to the south of the CdA planning area. These revisions will incorporate the fire, fuels, and related vegetation management direction resulting from the Fire Management Direction Amendment (above). It also will incorporate long-term management strategies to replace interim INFISH (Forest Service Inland Native Fish Strategy) guidance, which was developed in 1995 as interim strategies for managing fish-producing watersheds pending completion of the RMP, and will incorporate long-term management strategies to replace interim PACFISH (Forest Service Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California) guidance, which was developed in 1995 as interim aquatic management direction pending completion of the RMP.

National Forest Plan Revisions. Various National Forests have completed Forest Plan Revisions that establish management guidance for recreation, forest products, wildland fire management, livestock grazing, vegetation, and wildlife habitat, for future management of publicly owned lands within the National Forest System. Although they do not make site-specific decisions, the plans supply a path for all individual projects to follow. The revised forest management direction responds to new initiatives such as the National Fire Plan and Healthy Forest Initiative and to concerns about listed species, habitat restoration, and commodity production. The revised Forest Plans differ from the original plans in that they emphasize restoring or maintaining vegetation and watershed conditions and focus on the ecological condition of the forests rather than commodity production.

The Idaho Panhandle National Forest (2.5 million acres) is currently revising its forest plan and estimates completion in 2007. The Clearwater National Forest (1.8 million acres), adjacent to and south of the CdA planning area, is also revising its forest plan, with an estimated completion in 2006. These revisions will address access and recreation, wildlife, watersheds and aquatic species, inventoried roadless areas and proposed wilderness areas, vegetation, timber production, fire risk, and social and economic factors.

4.1.4 Incomplete or Unavailable Information

The CEQ established implementing regulations for NEPA, requiring that a federal agency identify relevant information that may be incomplete or unavailable for an evaluation of reasonably foreseeable significant adverse effects in an EIS (40 CFR 1502.22). If the information is essential to a reasoned choice among alternatives, it must be included or addressed in an EIS. Knowledge and information is and will always be incomplete, particularly with infinitely complex ecosystems considered at various scales.

The best available information pertinent to the decisions to be made was used in developing the RMP. Considerable effort has been taken to acquire and convert resource data into digital format for use in the plan—both from BLM sources and from outside sources.

Certain information was unavailable for use in developing this plan, usually because inventories have either not been conducted or are not complete. One of the major types of data unavailable is a current detailed inventory of forest vegetation.

In order to estimate existing acreages by cover type at the planning area level, the BLM correlated the Interior Columbia Basin Ecosystem Management Plan (ICBEMP) potential vegetation groups and Forest Service Vegetation Response Unit (VRUs) with vegetation mapping data analyzed by the Idaho Gap Analysis Program of the US Geological Survey (Scott et al. 2002). Gap analysis is a scientific method used by local, state, and federal land managers in identifying the degree to which native animal species and natural communities are represented in the present-day mix of lands. Using satellite imagery, the Idaho Gap Analysis Program mapped existing natural vegetation (land cover) to the level of dominant or co-dominant plant species. Thirty-eight cover types were mapped in the planning area.

Between 1992 and 1993, the CdA FO conducted an extensive inventory of the Forest/Woodland vegetation. Between 2002 and 2003, another extensive inventory was conducted on approximately 55,000 acres, mostly within the Silver Valley in Shoshone County east of Coeur d'Alene, and entered into BLM's Forest Vegetation Inventory System (FORVIS). Data collected from the 1992-1993 inventory were also put into FORVIS. Those areas that corresponded to the 2002-2003 inventories were "grown" through computer simulation (Forest Vegetation Simulator – FVS) to 2005. The 2002-2003 inventories were also grown to 2005. Both inventories were compared and the results revealed minimal differences (less than 300 board feet [BF]/acre). Since the 1992-1993 extensive inventory covered a majority of the commercial forest land both within and outside the Silver Valley area, data from this inventory was used to determine Probable Sale Quantity (PSQ), current stocking levels, and structure. Alternatives B, C, and D call for completing a FORVIS inventory on the remaining forest/woodland areas (approximately 27,500 acres).

This RMP is based on the concept of adaptive management, so it has been built to be dynamic enough to account for changes in resource conditions (e.g., large-scale wildland fire), new information and science, and changes in regulation and policies. No incomplete or unavailable information was deemed essential to a reasoned choice among the alternatives analyzed in this EIS.

4. Environmental Consequences

4.2 RESOURCES

4.2.1 Air Quality

4.2.1.1 Methods of Analysis

BLM assessed each of the alternatives for its potential to impact air quality by causing changes to particulate matter in the air. Particulate matter is the planning area's dominant air pollutant. Smoke and dust are the primary types of particulate air pollutants that could result from or be affected by land management direction specified in the alternatives.

4.2.1.2 Impacts

Impacts from Vegetation – Forests and Woodlands Management

Under all alternatives, impacts on air quality would include smoke created during use of prescribed fire and burning of slash piles, as well as fugitive dust from roads and equipment when implementing vegetation treatments. Impacts would usually be short-term and localized. Smoke emissions would be mitigated by conducting prescribed burns on days approved by the Montana-Idaho Airshed Group (MIAG). Dust emissions would be mitigated through best management practices (BMPs) such as watering roads and applying dust palliatives.

Alternative A: Short-term and localized increases in smoke and dust emissions would occur during implementation of vegetation treatments on 7,000 acres.

Alternative B: There would be a 37 percent increase in areas treated over current levels (Alternative A), which would likely result in corresponding short-term and localized increases in particulate emissions from smoke and fugitive dust. This increase in acres treated would also likely result in decreased long-term impacts when compared to current management, because there would be slightly less potential for large frequent wildland fires as a result of more acres treated.

Alternative C: Under this alternative, vegetation treatment activity would be reduced from current levels to approximately 1,200 acres, an 83 percent decrease. This would likely result in corresponding short-term and localized decreases in particulate emissions from smoke and fugitive dust. However, greater potential for larger and more frequent wildland fires could result from low impact tactics and from less treatment of fuels on the landscape. This could result in greater impacts in the long term.

Alternative D: Vegetation treatment activity would increase from current levels to approximately 8,200 acres, a 17 percent increase. This would likely result in corresponding short-term and localized increases in particulate emissions from smoke and fugitive dust, but decreased long term impacts due to decreased potential for large and frequent wildland fires. Similar to Alternative B, the increased number of acres treated will lower the potential for large and frequent wildland fires, thus reducing the potential for impacts on air quality in the long term.

Impacts from Wildland Fire Management

Impacts on air quality from wildland fire management activities include smoke and fugitive dust from roads and equipment. These affects would usually be short-term and localized. One of the management objectives for air quality is the reduction of particulate emissions from uncontrolled wildland fires. The primary method of reducing fire-related impacts from wildland fires is suppression. Fire suppression would remain a central strategy for all alternatives; however, wildland fire use, mechanical fuels treatments, and prescribed fire

treatments could also be used to varying degrees across alternatives. The planned nature of these treatments would allow the BLM to minimize impacts by scheduling and locating them for optimal control of emissions. A long-term impact from these treatment actions would be an improved fire regime condition class and the associated reduction in occurrence of particulate emissions from severe and uncontrollable wildland fire.

Alternative A: Currently the primary fire management objectives and actions emphasize resource protection through full fire suppression and post-fire emergency stabilization. While suppression would reduce short-term smoke emissions, suppression activities would also create fugitive dust. In the long-term, suppression would increase the potential for large and frequent uncontrollable wildland fires with associated increases in smoke emissions.

Alternative B: Emergency stabilization activities would be similar to those of Alternative A. Minimum suppression tactics (MIST) would be used in special designation areas. However, different from current management, Alternative B identifies 52,319 acres as potentially suitable for wildland fire use and proposes fuels treatments such as prescribed burning and mechanical treatments to protect economic resources. Less aggressive suppression tactics, including wildland fire use, would likely result in greater short-term smoke emissions but decreased fugitive dust emissions from roads and vehicles compared to current activities. The use of MIST may also reduce fugitive dust emissions. Smoke resulting from prescribed fire and pile burning would be mitigated through coordination of timing and location with the MIAG. In the long term, the use of wildland fire may reduce the risk of large, large scale and/or high impact stand replacing wildland fires that frequently result in substantial and uncontrollable impacts on air quality.

Alternative C: Impacts on air quality would be similar to those of Alternatives B and D. One difference from other alternatives is the amount of special designations where MIST would be employed. While the total area with special designations under other alternatives constitutes only a small portion of the planning area, Alternative C identifies approximately 23 percent of the BLM administered lands with some type of special designation (wilderness study area, area of critical environmental concern, wild and scenic river corridor, etc.). This sounds significant, but almost all of this area falls within the fire use area – common to Alternatives B, C, and D. Thus, smoke and dust emissions would still be very similar to alternative B or D in both the long and short term.

Alternative D: Impacts on air quality would be nearly identical to those of Alternative B.

Impacts from Forestry and Woodland Products Management

Forest products are directly related to forest vegetation management, and resulting impacts are discussed above. One additional potential impact from forest products, not mentioned above, would be the smoke and other particulate emissions from processing mills. Another would be dust from roads and equipment during firewood collection, as well as the smoke when firewood is burned. However, given the limited number of firewood permits issued on BLM land, impacts on air quality would be minimal. Firewood-related impacts would be generally the same across alternatives.

Alternative A: Air quality impacts would correspond with the PSQ of 3.7MMBF (million board feet), acquired from vegetation treatments across approximately 7,000 acres. These impacts would be short-term and localized, as well as mitigated as described above under impacts from Vegetation – Forests and Woodlands.

Alternative B: Impacts would be similar to Alternative A, with an increase corresponding to the 37 percent increase in the PSQ and acres to be treated over current levels.

4. Environmental Consequences

Alternative C: Impacts would be similar to Alternatives A and B, but decreased, corresponding with an 83 percent decrease in acres treated and a 76 percent decrease in the PSQ when compared to Alternative A.

Alternative D: Impacts would be similar to Alternatives A and B, with an increase corresponding to the 19 percent increase in the PSQ and a 17 percent increase in acres treated when compared to Alternative A.

Impacts from Livestock Grazing Management

Livestock management activities may result in impacts on air quality through the generation of fugitive dust. This dust could be generated by range and livestock management equipment and vehicles, or result from wind erosion when vegetative cover is removed or trampled by livestock. However, within the planning area, BLM anticipates that these impacts would be negligible due to the low level of grazing that occurs, or would occur, under all alternatives.

Impacts from Mineral Development

Particulate emissions from new road construction and use, exposure of soil to wind, and equipment operations and exhaust are the primary air quality concern associated with mineral development. Impacts from these emissions are likely to be long term but localized. All mineral development would require conformance with Idaho Department of Environmental Quality air quality regulations and permitting requirements. Currently (Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development that impacts air quality than Alternative C.

Impacts from Transportation and Travel Management

Fugitive dust resulting from vehicles driving on or off roads and trails, or from wind erosion in areas where vegetation has been removed by off-road vehicles, is the primary impact on air quality from transportation and travel management. All references to motorized travel in this section refer to wheeled vehicles. Snowmobile use would not cause appreciable impacts on air quality under any alternative.

Alternative A: Currently there are 63,041 acres that have no travel designation. By default, these areas are open to cross-country motorized travel. As described above, cross-country vehicle travel can remove vegetation, which would allow wind erosion to increase fugitive dust. There are also 27 miles of roads and trails open to motorized travel in the areas where vehicles are limited to designated roads. A small amount of fugitive dust may be generated by use of these roads. Only 162 acres are currently closed to motorized travel, where no impacts would occur.

Alternative B: There are no areas open to cross-country motorized travel under this alternative, thus impacts on air quality associated with open designations would not occur. Fugitive dust could be generated from use of the 282 miles of roads and trails designated for motorized use. While this is an increase in designated roads and trails over current management, the impacts on air quality would actually be less, because most of the additional road designations fall within areas that are currently open to off-road travel. This alternative retains the closed area designations from Alternative A.

Alternative C: Similar to Alternative B, there are no open areas and impacts associated with open designations would not occur. This alternative has 149 more acres closed to motorized travel, and 160 fewer miles of designated roads and trails, than Alternative B. While the increase in area closed is inconsequential, the decrease in designated roads and trails would concentrate motorized travel, which could result in greater generation of dust in localized areas.

Alternative D: Travel management related air quality impacts under this alternative would be very similar to Alternative B. However there would be an additional 469 acres closed to motorized travel, compared to current management. This would not make a substantial difference in the impacts on air quality, since vehicle travel would be limited to designated roads under Alternatives B, C, and D. Alternative D designates 107 fewer miles of roads and trail open to motorized travel than Alternative B. There would be a corresponding concentration of vehicle travel and impacts, similar to, but less than that described under Alternative C.

4.2.1.3 Cumulative Impacts

Activities within the planning area and adjacent areas related to Idaho Statewide Implementation Strategy for the National Fire Plan, wildland fire, fuels treatments, timber management, minerals development, population change, the Clean Air Act, as well as RMP and Forest Plan revisions could, along with the various proposed RMP alternatives, have a cumulative effect on air quality and impact air quality management decisions. The potential effects are likely to be similar for all alternatives.

Statewide implementation of the National Fire Plan and changes in the Clean Air Act could result in increased regulatory restrictions and additional requirements for conformance, as required for all of the proposed alternatives. Increased wildland fires and fuels treatments in the region are particularly likely to adversely impact air quality. As previously noted however, BLM coordinates fire management activities with the MT-ID Airshed Group. A primary mission of the air shed management group is to coordinate fire management activities between participating entities (such as BLM, Forest Service, IDEQ, and others) to ensure that simultaneously occurring actions do not cumulatively result in violations of air quality standards or significant deterioration of air quality including visibility. Under all alternatives, BLM's continued participation and coordination with this group would mitigate cumulative impacts on air quality due to fire management actions (including RMP and Forest Plan revisions).

Future increases in mineral development, timber harvesting and, in particular, population in the region could also effect air quality. These increases would likely present a substantial challenge to air quality management and necessitate vigilant assessment of direct and indirect impacts on air quality from planned actions to avoid negative cumulative impacts.

4. Environmental Consequences

4.2.2 Geology and Soil Resources

4.2.2.1 Methods of Analysis

BLM analyzed management objectives and actions to determine whether they would impact soil resources by causing or affecting soil erosion or compaction. Potential changes (increases or decreases) were then compared with current management for context.

4.2.2.2 Impacts

None of the alternatives would have an impact on geology, and there are no known unique geologic features in the planning area that would be affected.

Impacts from Soils Management

All alternatives would require implementing appropriate BMPs to protect soil and water resources. Similarly, management activities under any of the alternatives must comply with the Idaho Forest Practices Act and the Clean Water Act, which establish additional BMPs and impose penalties for water quality degradation from eroded sediments. To reduce the potential for mass wasting, all alternatives also have special management requirements when actions are proposed in landslide prone areas. The action alternatives (Alternatives B, C, and D) outline more specific direction (i.e., avoid locating roads or timber harvests on or adjacent to landslides) than current management, so would have greater effect on reducing the potential for mass wasting.

Impacts from Water Resources Management

Under all alternatives, measures (Interior Native Fish Strategy [INFISH] and Coeur d'Alene Native Fish Strategy [CNFISH]) and BMPs to prevent sedimentation to streams would protect soil resources from erosion. CNFISH would be implemented under Alternatives B, C, and D. This strategy would provide approximately the same level of protection to soils in riparian conservation areas adjacent to water bodies as the INFISH strategy under Alternative A. Restoration and conservation watersheds are identified under CNFISH in Alternatives B, C, and D, which may provide slightly more specific guidance on how and where to implement restoration activities, which would also protect soil resources. However, Alternative A does not preclude the same restoration activities to meet INFISH goals.

Impacts from Vegetation—Forests and Woodlands Management

Vegetation treatments would involve removal of vegetative cover, prescribed burning, construction of roads and use of heavy equipment. Removal of vegetative cover and prescribed burning would result in short-term increased soil erosion. Fires that heat soils to high temperatures can volatilize organics and produce a hydrophobic layer that contributes to higher rates of runoff and more soil erosion. While vegetative treatments and/or low-intensity burns may result in short-term soil disturbance, they would also reduce the risk of long-term damage to soils from high-intensity wildland fires. Road construction and use contribute to soil compaction and erosion, particularly in forested areas (Gucinski et al. 2001). Use of heavy equipment off-road can cause additional soil compaction and erosion. BMPs would be implemented under all alternatives to reduce the potential impacts of road construction, maintenance, and use. BMPs outlining soil moisture and burn intensity limitations for prescribed burning, soil moisture restrictions for use of heavy machinery, and use of equipment designed for low ground pressure would further reduce potential impacts under all alternatives.

Alternative A: This alternative would involve vegetation treatment and hazardous fuels reduction treatments on approximately 7,000 acres. These treatments could result in short-term soil compaction and soil erosion as

described above. However, treatments would also reduce the long-term potential for impacts from high intensity wildland fires.

Alternative B: This alternative would involve a 37 percent increase in area treated over current management, with a corresponding increase in the potential for short-term, and decrease in long-term impacts on soil resources.

Alternative C: This alternative would involve an 83 percent decrease in area treated over current management, with a corresponding decrease in the potential for short-term, and increase in long-term impacts on soil resources.

Alternative D: This alternative would involve a 17 percent increase in area treated over current management, with a corresponding increase in the potential for short-term, and decrease in long-term impacts on soil resources.

Impacts from Vegetation—Riparian and Wetlands Management

Maintaining proper functioning condition (PFC) of riparian and wetland areas would also involve maintaining healthy soil conditions. This would result in reduction in, and prevention of soil erosion. The objective for PFC under Alternatives A, B, and D is 75 percent. Under Alternative B, the objective is only 50 percent, which means there would be potential to allow more activities that would contribute to soil erosion.

Impacts from Fish and Wildlife Management

Implementing riparian habitat conservation areas (RHCA/RCAs) would minimize soil-disturbing activities adjacent to water bodies. The limits on such activities, proposed under INFISH and CNFISH, are designed to maintain or improve aquatic habitat, which includes minimizing sediment loads (i.e., minimizing soil erosion). All alternatives except Alternative C would involve vegetation treatments to improve big game habitat conditions. BMPs would be applied to these treatments to minimize potential impacts on soils, but the use of prescribed fire and heavy machinery associated with vegetation treatments has the potential to cause soil erosion and compaction, as described under Impacts from Vegetation – Forest Management above. All alternatives call for closing roads in the vicinity of big game winter range for part of the year, which may reduce localized soil compaction. Also, under Alternatives C and D, road densities outside urban or rural areas would be reduced to one mile of road per square mile or less. Road decommissioning and closures would reduce soil compaction and erosion.

Impacts from Special Status Species Management

Impacts from INFISH and CNFISH have already been discussed. In addition, the action alternatives (Alternatives B, C, and D) limit road densities within Bear Management Units. Alternatives B and C also limit road densities in wolverine habitat. These road density limitations would further reduce potential for compaction and erosion.

Impacts from Wildland Fire Management

Impacts that wildland fire can cause on soils are described above under Impacts from Vegetation – Forest Management. The action alternatives (Alternatives B, C, and D) list the protection of areas with highly erodible soils among the priorities for fire management. Although erodible soils are a consideration for fire management activities under current management, this added focus would result in less potential for impacts on soils from wildland fire and fire management activities. The action alternatives also identify approximately 52,319 acres that may be managed for wildland fire use to provide resource benefits. This could afford the opportunity to allow low-intensity fire to occur, which would reduce potential for high-intensity fire. The low-

4. Environmental Consequences

intensity fire could result in short-term soil erosion, and associated fire management activities could cause short-term erosion and compaction. However, long-term potential for high-intensity wildland fire, and the associated greater soil impacts, would be reduced.

Impacts from Visual Resources Management

Visual resources management can indirectly impact soils through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no additional impact. The total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. These constraints would reduce the potential for impacts on soils, quantitatively corresponding to the total area classified as VRM II.

Impacts from Forestry and Woodland Products Management

The probable sale quantities and potential impacts from harvesting forest products are directly related to, and the same as those described above under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Livestock Grazing Management

The primary impacts on soil from grazing are soil compaction from livestock and increased potential for erosion from vegetation removal. However, impacts would be minimal due to the small amount of BLM-administered land leased for grazing in the CdA FO. Under Alternatives A and B, 4,004 acres would be available for grazing. Under Alternatives C and D, only 1,218 acres would be available. In general, fewer acres of livestock grazing would result in more beneficial impacts on soil resources, including lower rates of soil erosion and compaction. All alternatives would follow the Idaho Rangeland Health Standards and Guidelines, which would reduce livestock related impacts on soils.

Impacts from Minerals Management

Erosion from exposure of soil, soil compaction and erosion from new road construction and use, and equipment operations, are the primary geology concerns associated with mineral development. Impacts from these activities are likely to be long-term but localized. Currently (Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development, which impacts soils more than Alternative C.

Impacts from Recreation Management

Generally, exposure of soil to erosion due to recreational use will be less in SRMAs than in the ERMA because SRMAs are managed more intensively. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on soils more than any other alternative.

Impacts from Renewable Energy Management

Impacts on soils from biomass harvesting and utilization would be the same as those described under Vegetation – Forests and Woodlands Management. For wind energy development, associated road

construction and use of heavy machinery to install and maintain wind turbines and power lines could cause soil compaction and erosion. BMPs would be implemented under all alternatives, which would reduce the potential for impacts on soils. The action alternatives (Alternatives B, C, and D) contain management direction for renewable energy development that current management does not. This direction would help to reduce the potential for impacts on soils.

Impacts from Transportation and Travel Management

Motorized vehicle traffic on roads and trails can cause soil compaction and erosion. Off-road travel can compact soil and remove vegetation, exposing soil to wind and rain which increases potential for erosion. Snowmobile use would not have a notable impact on soils.

Alternative A: Currently there are 63,041 acres that have no travel designation. By default, these areas are open to cross-country motorized travel. As described above, off-road use in these areas could increase potential for soil compaction and erosion. There are also 27 miles of roads and trails open to motorized travel in the areas where vehicles are limited to designated roads. Use of these roads could result in soil erosion. Only 162 acres are currently closed to motorized travel, where no impacts would occur.

Alternative B: There is no area open to cross-county motorized travel, thus impacts on soils associated with open designation would not occur. Erosion could occur from use of the 282 miles of roads and trails designated for motorized use. While this is an increase in designated roads and trails over current management, the impacts on soils would actually be less, due to the fact that most of the additional road designations fall within areas that would no longer be open to off-road travel. This alternative retains the closed area designations from Alternative A.

Alternative C: Similar to Alternative B, there is no open area and impacts associated with open designation would not occur. This alternative has 149 more acres closed to motorized travel, and 160 fewer miles of designated roads and trails, than Alternative B. While the increase in area closed is inconsequential, the decrease in designated roads and trails would concentrate motorized travel, which could result in greater potential for erosion in localized areas.

Alternative D: Travel management related soils impacts under this alternative would be very similar to Alternative B. However there would be an additional 469 acres closed to motorized travel, compared with current management. This would not make a substantial difference in the impacts on air quality since vehicle travel would be limited to designated roads under Alternatives B, C, and D. Alternative D designates 107 fewer miles of roads and trail open to motorized travel than Alternative B. There would be a corresponding concentration of vehicle travel and impacts, similar to but less than those described under Alternative C.

Impacts from Lands and Realty Management

ROW authorizations and land use permits are generally for activities such as road construction or facilities development. Construction, road use, and heavy equipment can cause soil compaction and erosion.

Alternative A: Current management does not specify any specific restrictions on ROW authorizations or land use permits. Thus related impacts on soils could occur anywhere in the planning area.

Alternative B: This alternative would involve 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. There would be no potential for related impacts on soils in exclusion areas, and the potential would be greatly reduced in avoidance areas. However,

4. Environmental Consequences

these designations would also concentrate authorizations within the remaining 51,548 acres, which could increase the intensity of localized impacts.

Alternative C: This alternative would involve 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. Impacts on soils within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the intensity of localized impacts.

Alternative D: This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. Impacts on soils within these areas would be the same as described for Alternative B, corresponding to the slight differences in area. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designations Management

Special designations (ACEC and RNA) could help to protect soils by limiting uses. Localized protective management of stream segments found eligible or suitable for Wild and Scenic River designation could provide similar protection.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Soils would be indirectly protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on soils are already not allowed. Thus, designation of the Lund Creek RNA would not affect soils, unless the WSA is released by Congress. Indefinite protective management of five stream segments totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation would similarly protect soils. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer), and very little ability to influence soils. Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments would add little to protection of soils, unless the WSA is released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect soils as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of soils.

Alternative C: This alternative would protect soils through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of soils. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

4.2.2.3 Cumulative Effects

The cumulative impacts on soils are limited to the immediate area of any management activity. Few past, present, or reasonably foreseeable future activities outside the CdA FO would affect soil resources within the CdA FO. Impacts on soil resources from road construction, timber harvests, mechanical vegetation treatments, prescribed burning, grazing, or other land management activities are localized and do not affect soils outside the area of activity. The exception to this general concept involves activities that increase or reduce the risks of wildland fires, which can spread from adjacent areas into the CdA FO, potentially affecting soil resources. However, because other resources, including water quality and fish habitat are affected by soil conditions outside of the planning area, potential impacts on soil resources from past, present, and foreseeable future actions are addressed at the regional scale.

In general, continued effects from past land use activities – such as mining, grazing, road construction, and timber harvest – degrade soil conditions. Generally, cumulative impacts for past (and less often) present factors are contributing to degraded soil conditions. As management restrictions, particularly on federal lands, have focused more on watershed conditions, activities have been restricted and BMPs have been developed to protect soil resources. This trend is likely to continue in the future.

Alternative A, followed by Alternatives B and D, would be more likely to affect soil resources than the other alternatives, potentially resulting in measurable soil erosion and soil compaction in the CdA FO. Alternative C would be more protective of soil resources than the other alternatives, except that it would allow more potential for large, high-intensity wildland fire (and associated impacts). Considered with other past, present, and foreseeable future actions throughout northern Idaho, these potential impacts on soils could be compounded or mitigated, depending on the extent of ground-disturbing activities and the application of appropriate BMPs. The specific potential impacts on soils from other past, present, and future actions in northern Idaho are discussed below.

The decrease in the acres of public lands managed by the CdA FO has likely resulted in fewer protective management restrictions in areas no longer in federal ownership. For example, timber harvest and related road construction activities within Idaho are regulated by the Idaho Forest Practices Act under the Idaho Department of Lands. This act does not provide the level of protection and conservation for soils that BLM and Forest Service regulations and policies provide on federally administered lands (Forest Service 2003). However, as future ownership adjustment actions consolidate public lands in the CdA FO, soil resources will likely be managed across watersheds, which would protect soils more effectively.

Historic wildland fire suppression has resulted in increased risk of large, high-severity wildland fires, which could result in large-scale erosion. Fires that occur outside of BLM lands have the potential to spread to the CdA FO, impacting soil resources. The National Fire Plan was developed in response to these high-severity wildland fires. The intent of the National Fire Plan is to develop strategies and treatments that are coordinated between various landowners, including federal agencies, to address the variety of hazards and risks that occur to reduce undesirable effects of wildland fires on all lands. To the extent that fire risks are mitigated across landscapes, including BLM lands, the risks of large wildland fires would be reduced, which would protect soil resources.

As more fuels treatments occur in the CdA FO and adjacent lands, short-term, localized soil compaction and erosion could occur. Implementing BMPs on federal lands would likely reduce the level of impacts. Because of fewer restrictions, short-term, localized impacts are more likely on private lands. Localized impacts on soils outside the CdA FO would be unlikely to affect soil resources in the CdA FO. If fuels treatments successfully

4. Environmental Consequences

prevent large, high-severity fires, soil resources would benefit in the long-term. Reducing the risk of high-severity wildland fires outside of the CdA FO would benefit soil resources in the FO by minimizing the risk of a fire that could spread into the FO. Similarly, to the extent that insect and disease activity increase the risk of large, high-severity fires on private and public lands, soil resources could be impacted. Activities designed to treat or prevent the spread of insects and diseases could result in short-term, localized impacts on soils but would provide long-term protection to soils by reducing the risk of wildland fire.

Past timber harvest on private lands, State of Idaho lands, BLM-administered lands, and National Forest lands have resulted in soil compaction and erosion. Current timber activities, particularly on federal lands, are subject to more environmental regulations, resulting in fewer impacts on soils.

Past road construction on BLM-administered lands, private lands, State of Idaho lands, and National Forest lands has resulted in localized impacts on soil resources. Future impacts on soils will likely decrease on federal lands because of better BMPs available to reduce impacts on soils. Road BMPs are less protective of soils on private and State of Idaho lands and future road building in these areas could result in impacts on soils.

The long-term impacts of livestock grazing would result in soil compaction and erosion in areas of concentrated use. Grazing on lands outside of the planning area has not likely affected soils. Implementation of the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management should prevent long-term soil damage by requiring changes in management at the first signs of potential damage. Efforts to control invasive species will likely continue on federal and state lands and, to a lesser extent, private lands.

Minerals activities have impacted soil resources, particularly in the Silver Valley area on private and public lands. Mining on BLM-administered lands, Nez Perce and Coeur d'Alene Reservation lands, private lands, State of Idaho lands, and National Forest lands has resulted in localized impacts on soil resources. Increased environmental regulations in the Bunker Hill/Coeur d'Alene Basin Superfund Site has resulted in remediation activities and reduced impacts on soils. The level of future minerals development in the CdA FO will depend on commodity prices, urban growth, and construction needs. If prices increase and mining activities increase in the future, potential impacts on soils will also increase. Drilling one or two exploratory oil and gas holes or geothermal wells would involve localized impacts on soils. Increased salable mineral activities (including extraction of sand and gravel, crushed rock, and decorative stone) would result in localized soil compaction and erosion.

Trends of increasing population in the CdA FO will likely result in greater demand for infrastructure, including roads, as well as forest products, minerals, and recreation activities, all of which could result in increased soil compaction and erosion. Local governments will be faced with direct pressures from population growth and movement, including demands for intensified development in rural areas. In the past, local governments in Idaho generally accommodated growth in ways that negatively affected soil resources (Forest Service 2003). Because there is little consistency among local governments regarding the way they address land use and environmental issues, both positive and negative effects on soils can be expected.

Along with population, recreation use is also increasing in northern Idaho, resulting in greater potential soil compaction and erosion. Implementing BMPs and monitoring their effectiveness, and more effective recreation management to limit OHV users to established trails, could reduce potential impacts on soils from recreation uses.

Some of the federal and state agency funding to conserve populations of fish and wildlife species would likely be used to reduce soil erosion and sedimentation to streams. Increased funding would protect soil resources. If species were delisted under the Endangered Species Act, habitat protections that restricted road construction or other surface disturbing activities could not be removed. If these activities were allowed to a greater extent than under the current situation, soil resources would be impacted. Efforts to reduce nonpoint source pollution to impaired water bodies will likely involve reductions in soil erosion and sedimentation, which are both a potential contaminant and a transporter of many other potential contaminants. Approaches to reducing sedimentation to streams will likely involve implementing BMPs to prevent or reduce soil erosion, which would protect soil resources. Implementation of ICBEMP has resulted and would continue to result in protection of soil resources. The Forest Service has already updated several Forest Plans to incorporate the recommendations of ICBEMP. The BLM is also including these recommendations in the CdA RMP. Among the provisions that will protect soils are the focus on maintaining and promoting a productive ecosystem and restoring areas that are degraded. Efforts to avoid uncharacteristically large and severe wildland fires would also protect soil resources.

Implementation of the revised Forest Plans will protect soil resources because management standards and guidelines emphasize restoring or maintaining watershed conditions, including soil resources.

4. Environmental Consequences

4.2.3 Water Resources

4.2.3.1 Methods of Analysis

Management actions could result in impacts on water resources management if they were to directly or indirectly change the quantity or quality of water resources. BLM analyzed the potential for management objectives and actions to change the following indicators of water quantity and quality:

- Water flow (flow regime)
- Sediment load
- Water Temperature
- Dissolved or suspended metals and other chemicals

Assumptions

- Reclamation actions would continue on some lands impacted by mining, as described in the Bunker Hill Record of Decision.
- Implementation of Idaho Department of Environmental Quality Water Quality Restoration Plans and establishment of total maximum daily loads (TMDLs) are expected to improve water quality.
- Existing roads within the CdA FO would continue to erode from motorized use and natural processes, resulting in impacts on water quality in adjacent streams.

4.2.3.2 Impacts

Impacts from Water Resources Management

All alternatives call for the prescription and implementation of BMPs to prevent degradation of water quality. Such BMPs, to include those listed in Appendix A, would reduce the potential for impacts on water quality. Implementing BMPs related to road construction and maintenance, timber harvesting activities (see Appendix A), fire management, noxious weed control, and other management actions would minimize or prevent soil erosion and sedimentation and minimize discharge of metals to surface and groundwater. As a result, impacts on surface water quality would be minimized. Longer retention of water within the upper watershed would promote groundwater recharge and increased soil moisture, contributing to more stable stream flow regimes. BMPs would also be used to control sources of nonpoint pollution and eliminate impairments such as poorly drained roads that may be occurring as a result of authorized activities.

Alternative A: Identifying watershed problems and inventorying water resources would continue under Alternative A. Data collection, monitoring, and assessment would enable water resource managers to select appropriate BMPs to maintain or restore proper functioning condition, and to reduce or prevent contributions to water quality impairment. The INFISH strategy encourages data collection and watershed assessment for the purpose of protecting or restoring fish habitat, which is an indirect indicator of the condition of water resources. In the absence of a watershed analysis, interim Riparian Management Objectives (RMOs) would be implemented, which could be replaced by site-specific RMOs after watershed analysis is completed.

Developing plans to alleviate watershed problems could contribute to improvement in water resources. The INFISH strategy encourages development of site-specific RMOs based on watershed analysis. The degree of success would be dependent on the content of specific plans. Under Alternative A, management within

12,869 acres identified as Riparian Habitat Conservation Areas (for protection of salmonid species) would continue to be guided by the standards and guidelines identified in the INFISH strategy.

Action Alternatives (Alternatives B, C, and D): Impacts would be the same as for Alternative A, except use of riparian conservation area (RCA) guidelines to identify and correct water resource-related problems under CNFISH is expected to result in improvements in surface and groundwater quality watershed function compared to Alternative A. Among the improvements are general provisions requiring that a restoration component be included as part of actions and events in RCAs that are not at desired condition, and prohibitions against long-term degradation of aquatic conditions (see Appendix D). Specific measures relating to timber management and road management would result in greater protections and improvements in water resources relative to Alternative A. In general, the RCA guidelines are more restrictive of activities that could impact water resource than current management guidelines and allow for fewer exceptions. As a result, the action alternatives would result in fewer impacts on water resources than under Alternative A.

The action alternatives also call for cooperation between BLM and adjacent landowners, agencies, tribes, and communities to meet beneficial use criteria for water resources. Although similar cooperation could occur under Alternative A, it is specifically encouraged under the action alternatives.

Impacts from Soil Resources Management

Management under all of the alternatives could impact rates of soil erosion and therefore could affect water quality (sediment load) and stream flows. BMPs are interventions designed to minimize the impacts of human activities on water quality caused by discharge of sediment or chemical constituents. BMPs range from those designed to reduce or prevent the generation of sediment or chemical constituents at their source, to those designed to contain and/or treat runoff before it reaches a water body.

The CNFISH under Alternatives B through D provides additional protection of water resources with respect to timber harvesting and road construction and maintenance activities that are not provided under INFISH. The CNFISH also recognizes specific watersheds for additional protection. These exceptions are also described below.

Alternative A: Increases in sediment and stream temperature are the two most common sources of stream impairment in the CdA FO. Most of the existing documentation supporting TMDLs suggests that current BLM management does not contribute substantially to existing impairments. Under Alternative A, impacts from soil resource management would primarily involve control of soil erosion associated with road construction and maintenance of roads and timber harvesting, and the associated reduction in sediments in surface water. Impacts on water would continue to be controlled and water quality would improve due to implementation of BMPs and the guidelines and standards for roads in Appendix B.

Current management also calls for the identification of areas prone to landslides and implementation of Category 4 RHCA buffers, which would reduce the potential for landslides (mass erosion) triggered by human activities. The primary management option for minimizing mass erosion resulting from roads or timber harvest is avoiding high-risk sites. This would not necessarily prevent landslides, but it could affect water quality by reducing the frequency and potential for sediment delivery to streams.

Action Alternatives (Alternatives B, C, and D): Impacts would be similar to Alternative A, except as described below.

4. Environmental Consequences

Implementing CNFISH guidelines (Appendix D) and BMPs (Appendix A) for timber harvesting and road construction and maintenance activities would provide additional protection to soils in riparian conservation areas, beyond that identified under Alternative A. Regulating soil-disturbing activities within landslide-prone areas and creating buffers, as outlined in CNFISH, would affect water quality by reducing the potential for sediment delivery to surface water. The action alternatives would also prioritize restoration and conservation efforts in specific watersheds, which would improve stabilization more quickly than under Alternative A, further reducing related impacts on water quality.

The action alternatives call for applying appropriate reclamation measures to mitigate soil erosion and sediment delivery to streams at the subwatershed scale of evaluation. Restoration measures have already been initiated under current management in the Pine Creek watershed, so these actions are not unique to Alternatives B, C, and D. However, specifically identifying them in the RMP provides greater assurance that restoration opportunities would be identified and that excessive sediment loading to streams would be addressed in all watersheds.

Reduction of soil erosion, particularly in sensitive areas (priority watersheds) with steep slopes or highly erodible soils, would help to prevent or reverse impairment of affected water bodies. Alternatives B, C, and D more specifically identify the site characteristics that would trigger additional slope stability assessment (for example, slopes greater than 55 percent, or areas with indicators such as hydric vegetation, convergent slopes, or perched groundwater).

Alternatives B, C, and D prohibit locating roads in areas of unstable slopes and prioritize the restoration and removal of roads in areas of unstable slopes. These actions would further reduce impacts on water resources from soil erosion. Short-term impacts on water quality could occur from road obliteration activities but would be mitigated by implementing BMPs, and by the long-term elimination of impacts.

Impacts from Vegetation- Forests and Woodlands

Research has consistently shown that roads have the greatest effect on surface and mass erosion of all forest practices. A large body of research shows, however, that many of the sedimentation and erosional impacts of roads are manageable through proper planning, location, design, maintenance, and closure.

Alternative A: Vegetation treatments on approximately 7,000 acres could result in short-term to long-term impacts on water resources due to increased erosion. However, such treatments would also reduce the potential for high-intensity wildland fire. This would reduce the potential for soil erosion and rapid runoff that often occurs in areas affected by intense fires.

Alternative B: Vegetation treatments are more specific under Alternative B than Alternative A and apply to 37 percent more acres. The short-term indirect impacts on water quality resulting from these treatments would be correspondingly greater than under Alternative A. Similarly, the long-term reduction in potential water quality impacts from high-intensity wildland fires is expected to be greater under Alternative B.

Alternative C: This alternative would have the lowest potential for short-term forest vegetation management related impacts on water due to an 83 percent decrease in the number of acres that would be treated compared to current management. There would also be a corresponding increase in potential impacts from intense wildland fire on the untreated acres.

Alternative D: Alternative D would result in a 17 percent increase in acres treated compared to current management. Impacts on water quality would be similar to those identified under Alternative B, quantitatively adjusted for the slight decrease in acres treated.

Impacts from Vegetation-Riparian and Wetlands Management

Maintaining or restoring riparian and wetland areas to PFC would affect surface water quality by reducing erosion and sediment transport to water bodies and providing shade to reduce water temperatures. Under Alternatives A, C, and D, the objective for riparian and wetland areas in PFC is 75 percent. It is only 50 percent under Alternative B. The effects on water quality would correspond to these percentages. Given the BLM's limited land ownership in most watersheds, the potential for success in achieving the goal for standing water bodies would be influenced by the degree of control or influence that BLM can exert over the watersheds that contribute to these water bodies.

Impacts from Vegetation - Nonforested Management

Nonforested lands represent about nine percent of the CdA FO. Management of nonforested lands would have impacts on water resources similar to those described for forested lands. Reduction in vegetation can result in increased soil erosion. This vegetation tends to occur in areas of repeated past fires, and these lands are vulnerable to encroachment by invasive plant species, some of which have increased susceptibility to wildland fire. Therefore, from the perspective of water quality, one of the principal issues would be the effects on soil erosion and water quality from fire. Idaho Rangeland Health Standards would continue to be applied to management of these lands under Alternative A, which would affect water resources because these standards are designed in part to reduce soil erosion and restore damaged soils and vegetation cover. Management and associated impacts are substantially the same across all alternatives.

Impacts from Vegetation-Invasive Species and Noxious Weeds Management

A variety of control techniques (biological, manual, cultural, and herbicidal) would be used to address invasive plant species, in order to increase effectiveness and minimize reliance on chemicals. During application of herbicide to invasive species, there is always a slight potential for chemicals to get into surface water. Careful management and monitoring of applications would minimize this potential. The impacts on water resources are expected to be approximately the same under all alternatives since the actions would be the same under all alternatives. Reduction of invasive species populations promotes growth of native plants, which can reduce soil erosion and sediment loads in adjacent streams.

Impacts from Fish and Wildlife, and Special Status Species Management

Efforts to protect and enhance riparian and aquatic ecosystems through implementation of INFISH and CNFISH standards and guidelines in RHCAs would reduce sediment runoff and improve water retention and storage. INFISH identifies interim standards but allows for development of site-specific standards based on analysis of individual RHCAs. The purpose is to restore inland fish habitat, but the effect of successful implementation of these measures would be to restore and maintain the identified riparian areas in PFC. Effects of PFC on water quality are identified above under Impacts from Vegetation – Riparian and Wetlands.

Road closure, removal, and other actions to manage big game habitat would lower potential for erosion and sediment caused by motorized vehicles.

These management actions and associated effects on water quality are similar in type and quantity across all alternatives.

4. Environmental Consequences

Impacts from Wildland Fire Management

Prevention and suppression of wildland fires, if successful, would help to protect surface and groundwater quality and retention and storage of water resources in the watershed by reducing erosion and preventing rapid runoff that often results from loss of vegetation cover after a fire. Runoff from burned areas can also transport chemical products of combustion to water bodies. In some cases, fire suppression chemicals might be needed to control a fire, and these can be transported to a water body. All alternatives call for stabilization of slopes or manmade sites, and revegetation of burned areas, which would help to reduce impacts on water quality from eroded sediment and chemical contaminants.

Alternative A: Current management emphasizes suppression and does not allow for fire use. It calls for full suppression within one operational period, which may require heavy application of fire suppression chemicals, rather than less aggressive techniques, potentially leading to greater water quality impacts.

Alternative B: This alternative calls for developing plans to implement wildland fire use within approximately 52,319 acres. It also calls for protecting economically valuable resources and increasing protection of WUI and municipal watersheds and infrastructure, through utilization of fuels treatment activities and greater public education and coordination with other entities. These actions do not have counterparts under Alternative A, although they are implemented to some degree. The use of wildland fire and fuel treatments could result in increased short-term soil erosion and consequent water quality impacts, but is expected to reduce long-term impacts through more effective prevention and control of wildland fires. Plans would identify BMPs to minimize erosion and impacts on water resources.

Alternative C: This alternative is similar to Alternative B in its objectives and the associated actions. However, this alternative emphasizes low impact suppression techniques and protection of noncommodity resources such as wildlife habitat. Alternative C does not call for full suppression within one operational period. In general, since devastating uncontrolled wildland fires are undesirable for both habitat protection and commodity production, and because habitat protection would apply to lands that are not particularly valuable for commodity production, Alternative C could be more protective of water resources than Alternative B. However, the emphasis on habitat protection is likely to result in more reliance on fire prevention techniques that are less intrusive and take longer to implement, more fuel remaining in place where it can increase the intensity of fires, and less effective fire prevention measures. The result is likely to be fewer short-term impacts on water resources, but greater risk of major long-term impacts on water resources.

Alternative D: Management under Alternative D would be similar to Alternative B. It would rely more on quick response and suppression of fire starts than Alternative C, but it would include more emphasis on protecting noncommodity resources than Alternative B. The short-term impacts on water resources are likely to be similar to Alternative B, and the long-term impacts would probably be less than under Alternative C. The impacts on water resources would be most dependent on the relative effectiveness in preventing large, uncontrolled fires.

Impacts from Visual Resources Management

Visual resources management can indirectly impact water quality through the limitations it place on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (195 percent increase over current), and 23,551 acres for Alternative D (65 percent increase over current). Only

low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. These constraints would reduce the potential for impacts on water quality, quantitatively corresponding to the total area classified as VRM II.

Impacts from Forestry and Woodland Products Management

The potential impacts from harvesting forest products are the same as those described above under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Livestock Grazing Management

Grazing animals can impact water resources by compacting or disturbing soils, reducing vegetation cover, increasing nutrient loading and pathogenic organism concentrations in surface water, and altering runoff patterns by creating preferential pathways for runoff along trails. Such impacts are often associated with incorrect allocation of the available resource due to overestimation of the carrying capacity of the land. Within the planning area, carrying capacity estimation has been successfully completed, and negligible impacts on water resources have been observed under current management. In general, impacts from livestock grazing would be minimal due to the small amount of BLM-administered land leased for grazing in the CdA FO. Under Alternatives A and B, 4,004 acres would be available for grazing. Under Alternatives C and D, only 1,218 acres would be available. No additional impacts are expected under Alternative B, which would continue current allocations, and Alternatives C and D would reduce current livestock allocation.

Impacts from Minerals Management

The impacts on water resources from locatable mineral exploration and development could vary greatly depending on location, type of mineral, and size of operation. Impacts can include discharge of contaminants to surface water, leaching of heavy metals, acids, or other mineral constituents from tailings piles to surface or groundwater, impacts on groundwater levels from dewatering operations, chemical spills, air deposition of particulates or other chemicals from ore processing operations, as well as more generic impacts from installation of utilities, road construction, and other ancillary activities. Modern mining operations must conform to federal and state environmental laws, such as the Clean Water Act, Resource Conservation and Recovery Act (RCRA), the Endangered Species Act (ESA), and others. Even with these laws and their implementing regulations, large-scale locatable mineral development involves major environmental risk associated with storing tailings, managing water from dewatering operations, and managing chemicals used in the processing of ore. After mining activities are completed, site restoration may require many years, is likely to be costly, and may encounter problems that were not anticipated at the onset of operations.

The impacts on water resources from salable minerals would be generally less than for locatable minerals. Most mineral operations are small and relatively simple. Impacts would typically include generation and discharge of contaminated surface water or water from dewatering operations, discharge of sediment, and potential for spills or releases of petroleum products or other chemicals, and alteration of drainage patterns. The potential for these impacts would be reduced by compliance with existing federal and state laws and regulations. The impacts on water resources from leasable mineral operations could be similar to those described for locatables.

Currently (Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on water quality than Alternative C.

4. Environmental Consequences

Impacts from Recreation Management

Generally, exposure of soil to erosion due to recreational use, which results in increased sediment loads to streams, will be less in SRMAs than in the ERMA. Thus the potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on water quality more than any other alternative.

Impacts from Renewable Energy Management

Impacts on water quality from biomass harvesting and utilization would be the same as those described under Vegetation – Forests and Woodlands Management. For wind energy development, associated road construction and use of heavy machinery to install and maintain wind turbines and power lines could cause soil compaction and erosion, which would result in long-term impacts on water quality. BMPs would be implemented under all alternatives which would reduce the potential for impacts on water quality. The action alternatives (Alternatives B, C, and D) contain management direction for renewable energy development that current management does not. This direction would help to reduce the potential for impacts on water quality.

Impacts from Transportation and Travel Management

Motorized vehicle traffic on roads and trails can cause erosion and thus impact water quality. Off-road travel can remove vegetation, exposing soil to runoff which increases potential for increased sediment loads in surface water. These impacts increase when they occur within riparian areas. Snowmobile use would not have a notable impact on water quality.

Alternative A: Currently there are 63,041 acres that have no travel designation. By default, these areas are open to cross-country motorized travel. As described above, off-road use in these areas could increase potential for soil erosion and impacts on water quality. There are also 27 miles of roads and trails open to motorized travel in the areas where vehicles are limited to designated roads. Use of these roads could result in soil erosion and impacts on water quality. Only 162 acres are currently closed to motorized travel, where no impacts would occur.

Alternative B: There is no area open to cross-country motorized travel, thus impacts on water quality associated with open designation would not occur. Erosion and sediment runoff could occur from use of the 282 miles of roads and trails designated for motorized use. While this is an increase in designated roads and trails over current management, the impacts on water quality would actually be less, due to the fact that most of the additional road designations fall within areas that are currently open to off-road travel. This alternative retains the closed area designations from Alternative A.

Alternative C: Similar to Alternative B, there is no open area and impacts associated with open designation would not occur. This alternative has 149 more acres closed to motorized travel, and 160 fewer miles of designated roads and trails, than Alternative B. While the increase in closed area is inconsequential, the decrease in designated roads and trails would concentrate motorized travel, which could result in greater potential for erosion and sediment runoff in localized areas.

Alternative D: Travel management related soils impacts under this alternative would be very similar to Alternative B. However there would be an additional 469 acres closed to motorized travel, compared with current management. This would not make a substantial difference in the impacts on air quality since vehicle travel would be limited to designated roads under Alternatives B, C, and D. Alternative D designates 107

fewer miles of roads and trail open to motorized travel than Alternative B. There would be a corresponding concentration of vehicle travel and impacts, similar to but less than those described under Alternative C.

Impacts from Lands and Realty Management

ROW authorizations and use permits are generally for activities such as road construction or facilities development. Construction, road use, and heavy equipment can cause soil erosion and increase sediment loads in adjacent surface waters.

Current BLM policy prevents acquiring or transferring lands with unresolved hazardous materials issues. Alternative A does not specifically prevent this, potentially leaving flexibility for management to incur additional responsibility for hazardous materials sites if determined to be offset by other effects. While it is unlikely that this policy would be changed in the future, effects of public management could include economies of scale in the cost and timing of remediating a site, or increased probability of achieving remediation goals. In some cases, for example, acquisition of adjacent lands upslope or upgradient might enable BLM to address the sources of water quality problems that affect existing public lands more quickly and effectively than would otherwise be possible. Also, as with brownfields sites, residual contamination might be reasonably left in place if compatible with the intended long-term land use.

Alternative A: Current management does not specify any specific restrictions on ROW authorizations or land use permits. Thus related impacts on water resources could occur anywhere in the planning area.

Alternative B: This alternative would involve 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. There would be no potential for related impacts on water resources to occur in exclusion areas, and the potential would be greatly reduced in avoidance areas. However, these designations would also concentrate authorizations within the remaining 51,548 acres, which could increase the intensity of localized impacts.

Alternative C: This alternative would involve 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. Impacts on water quality within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the intensity of localized impacts.

Alternative D: This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. Impacts on water quality within these areas would be the same as described for Alternative B, corresponding to the differences in area. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designations Management

Special designations, such as ACECs, could help to protect water quality by limiting uses. Localized protective management of stream segments found eligible or suitable for Wild and Scenic River designation could provide similar protection.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. High water quality would be protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on water quality are already not

4. Environmental Consequences

allowed. Thus, designation of the Lund Creek RNA would not affect water quality, unless the WSA is released by Congress. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and Scenic River designation, would include protection of water quality. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership, and therefore little ability to influence water quality. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would be no added protection, unless the WSA is released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect water quality as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of water quality.

Alternative C: This alternative would protect existing water quality through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of water resources. Wild and Scenic River segment protection is identical to Alternatives A and C, with four suitable and one eligible segments.

Impacts from Social and Economic Conditions Management

Impacts on water quality are directly related to management direction for hazardous materials and abandoned mines.

Alternative A: The BLM would continue to monitor the performance of remedial actions where hazardous substances and AMLs remain in place. In this role, the BLM would continue to be involved in ensuring that remedial actions are effective in preventing or reducing impacts on water quality, although ultimate responsibility for effectiveness would rest with the responsible parties and state or federal agencies responsible for the cleanups. BLM action would help to identify and reduce impacts on water quality from hazardous materials incidences.

Alternative A provides that the BLM should continue to manage and clean up public lands in the Coeur d'Alene basin and in parts of the expanded Bunker Hill/Coeur d'Alene Basin Superfund Site, to protect the public, BLM employees, and the environment. Based on current management, this would involve continued efforts to address sources of contamination on BLM lands, to restore stream channels and functioning condition, and to coordinate with other agencies and private landowners to achieve these objectives. These efforts are expected to result in improvements in surface and groundwater quality over the long term. Alternative A specifies that actions involving hazardous materials on public lands must comply with existing federal and state regulations. Compliance with these requirements should prevent most impacts on water resources.

Alternative B: This alternative more fully defines the BLM's responsibilities in ensuring long-term effectiveness of remedies at closed/remediated sites than under Alternative A. These include the following:

- Preparation of monitoring plans;
- Performing five-year reviews; and
- Developing special stipulations for future use of the remediated lands.

These measures would be in addition to any state or federal requirements imposed at the time of closure. For example, remedies for EPA sites where waste remains after completion of the remedy typically specify long-term monitoring, deed restrictions, and periodic review requirements to ensure long-term effectiveness of management of the residual waste. However, these actions would provide additional assurance of protection of water resources at sites subject to future use.

Alternative B specifies several additional actions to reduce the potential for impacts associated with hazardous materials, including placing special stipulations in permits and leases defining specific requirements for managing hazardous materials, prohibiting unauthorized storage, treatment, or disposal of hazardous materials, and imposing restrictions under the mining law.

These additional actions would give the BLM flexibility to require compliance with more stringent requirements than existing state and federal regulations, or (in the case of application of the mining law), to prohibit or restrict disturbance or require bonding as assurance of proper handling.

These requirements could reduce the potential for releases that might affect water quality, resulting in improved water quality.

Alternative C: In addition to the measures in Alternative B, Alternative C would further restrict sites with significant known hazardous materials by withdrawing them from the mining law. This would prevent any future mineral activities at identified sites that currently are not covered by an active mining claim. Also, proposed activities on sites with valid existing rights would require a plan of operations for BLM approval regardless of the amount of proposed disturbance. These additional restrictions would have only minor additional beneficial impacts on water quality compared to Alternative B.

Alternative D: The impacts would be the same as under Alternative B with the addition of closing the sites to motorized vehicles when appropriate. This restriction builds on Alternative B and is broader in scope than Alternative C because any proposed activities, not just those associated with minerals, would require a plan of development for BLM approval.

4.2.3.3 Cumulative Effects

Nearly all of the actions and events listed in Table 4.1.3-1 would contribute to a cumulative impact on water resources in the region. The scattered land pattern in regard to watersheds in the planning area increases the potential for cumulative impacts. Public ownership is rarely continuous along an entire stream length so habitat conditions and management directions vary and may be quite fragmented. Outside public lands, resource decisions occurring on other lands managed by state, federal and private landowners would have cumulative effects on all public lands. Private lands present a full spectrum from full resource development and use to resource preservation. Although existing and future activities on private lands are not well known, the assumption is that surface-disturbing and disruptive activities, such as mineral development, and general construction, would occur. Many of the actions and events listed include a component intended to reduce or prevent impacts on water resources, or to reverse past effects on water resources. Many of the BLM management actions parallel or are designed to be implemented in coordination with these actions and events. The cumulative effect of these actions and events would be the increased protection, maintenance or

4. Environmental Consequences

restoration of water quality and the designated beneficial uses of water in the region. A trend in the improvement of water quality would likely be observed by actions and events that would increase water flow and protect stream temperature, while also reducing sediment loads and total dissolved and suspended metals.

This general cumulative impact would occur under each of the alternatives, with small variations in the magnitude of the impact, especially within the CdA FO, resulting from the different emphases of the alternatives. Actions and events conducted under Alternatives D would be the most proactive in the short and long term, followed by Alternative B. Alternative C, which emphasizes natural processes, would likely have the greatest short-term impacts, but with improvement over the long term. Alternative A would likely continue to improve conditions over both the short and long term, but at a slower rate than either Alternative B or D. The actions and events that fall within this category of impact include land tenure actions, the Idaho Statewide Implementation Strategy for the National Fire Plan, wildland fire management strategies, fish and wildlife conservation measures, implementation of the Endangered Species Act, implementation of Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management, implementation of the ICBEMP strategy, and implementation of resource-protection measures in the National Forest Plan revisions. Under all alternatives, water quality and watersheds should improve over the long term through participation in cooperative watershed planning efforts with other land management agencies, tribes, and private landowners.

Cumulative impacts that would affect water quality would occur from all activities that disturb soils, remove vegetation, and cause soil compaction or channel overland flows, such as timber harvest, road construction, recreational use, and mining. Such disturbances can result in accelerated soil erosion and runoff, which increase sediment, salt, nutrient and metal loads to local channels and lead to channel destabilization.

Actions and events or regional trends would have potential adverse impacts on water resources, unless mitigated through implementation of BMPs, compliance with existing laws and regulations, or through measures designed specifically to address impacts on water resources. Fire management actions, particularly fuel reduction measures that could involve soil disturbance or vegetation removal such as prescribed burns, thinning, slash removal, herbicide treatments, or wildland fire use, could result in short-term impacts on water quality, but are expected to reduce the risk of more catastrophic effects on water resources in the long-term. Management that emphasizes allowing natural processes (Alternative C), including fire, to proceed with minimal human intervention, might have substantial impacts on water resources over time, but reduced short-term impacts on water resources. Fire management on National Forest and private land, is an example of an area where the cumulative impacts of fire management decisions (whether to suppress fire, reduce fuel, or minimize human intervention) would influence outcomes on regional water resources to a much greater extent than the individual decisions associated with BLM management, since BLM manages relatively few acres of forest in the planning area.

Timber, livestock management, and mineral resource management actions throughout the region would have impacts similar to those described under the RMP project alternatives. In the case of timber management, US Forest Service management actions under the National Forest Plans and revisions are much more influential on regional water resource outcomes than BLM actions, due to the vastly larger amount of land area in the National Forests. However, BLM and the US Forest Service are each constrained by similar rules and guidelines intended for the protection of water resources, wildlife habitat, and protection of threatened and endangered species and other resources. In addition, BLM and the US Forest Service increasingly coordinate their plans and management actions to achieve common objectives for any given watershed, in the context of guidance that emphasizes watershed scale planning, and in the context of regional scale plans such as the

ICBEMP or INFISH. Thus, regional water resources outcomes resulting from forest management practices are likely to increasingly favor the protection of water resources, and to provide for increasing monitoring of impacts to allow corrective measures to be implemented and effective adaptive management of the resources. Differences in the level of emphasis on forest vegetation treatments under each of the alternatives of the RMP would result in relatively minor differences in the cumulative regional impacts on water resources due to the relatively small BLM land ownership, and the general consistency in management between the agencies.

The most important mineral development potential in the CdA cumulative effects region is for silver and gold in historically productive districts. These are also areas in which past mining activity has severely impacted water resources. Future mining activity would not result in the magnitude of impacts on water resources that have occurred from past mining activity, because current laws and regulations provide a high level of protection of water and other resources. Remediation of the Bunker Hill/Coeur d'Alene Basin Superfund Site is a long-term process, involving multiple agencies, as well as the current responsible parties. The Bunker Hill site continues to be a source of metals contamination of surface and groundwater, contaminated soils and sediments are transported by erosional process into streams, and then continue to migrate downstream. Although a remedy has been selected, and is being implemented, completion of the remedy will require many years. Therefore, restrictions will continue to be applied to water and land use within the affected area, and these restrictions, as well as activities associated with local remediation actions and events, will continue to influence land and water use in the region. In the long term, stabilization and removal of contaminated tailings and sediments will lead to reduced impacts on water resources.

Road construction, maintenance, and use are among the major causes of sediment erosion and associated water quality and drainage impacts. While no net increase in roads is expected on BLM lands, road construction and use to facilitate timber harvest, recreational access, and to a lesser extent mineral development, will continue to occur throughout the region. In recent years this activity has slowed, techniques for road building have improved, and regulatory and planning restrictions on roads have become more effective in reducing impacts on water resources. Therefore, the contribution of road construction and use to the net impacts on water resources is expected to gradually decrease over time.

Population growth can put increased demand on water resources. In the CdA FO region, high quality water supplies are plentiful in most areas. Increased municipal demand is not expected to stress the available supply, and there is limited agricultural and industrial demand. Demand for hydroelectric power, is increasing, but there is intense public resistance to siting new dams in the region, and most feasible sites have already been developed. Protection of migratory fish and preservation of Wild and Scenic Rivers also preclude the siting of new dams.

Increased population density and intensity of recreational use can lead to degradation of water resources. For example, increased lakeshore housing development can lead to water pollution; increased boating and other water-based activities can lead to water pollution; increased road density, camping facilities, trail use, and other uses can also contribute to water quality impairment. Although it is expected that demand for recreational opportunities will continue to increase, and impacts on water resources are likely to increase from this sector, the net impacts on water resources will decrease as other activities with more substantial impacts are reduced.

The cumulative impacts under each of the alternatives on water resources would be very similar and would generally parallel the impacts of the alternatives alone. Alternative A involves the fewest restrictions on resource productivity, so would least support growth of recreation-based economic activity. In the long-term, the continued decline in economic importance of the forest products, ranching, and mineral industries, and

4. Environmental Consequences

increased economic importance of tourism and recreational industries, due to factors independent of BLM management, may further reduce the importance of BLM management directed at maximizing resource productivity. Improvements in water resources will continue to occur in response to increased regulation of water resources under the Clean Water Act, and other existing legislation. Alternatives B and D would more proactively encourage greater protection of water resources than Alternative A; it would not provide as much protection as Alternative C, with the exception that large scale and/or high impact stand replacing wildland fires may be more probable under Alternative C (more accumulation of fuel) than under Alternatives B and D.

4.2.4 Vegetation – Forests and Woodlands

4.2.4.1 Methods of Analysis

BLM assessed the management objectives and actions of the alternatives to determine how they would change forested vegetation composition, structure, or seral stage. As described in Chapter 3, composition is indicated by component tree species and structure is indicated by seral stage. Fire is one of the primary indicators of function. Impacts were analyzed to determine their effect on restoring composition, structure, and function to historic conditions. Indicators of forest health (tree mortality, stocking levels, and insect and disease levels) are directly related to composition, structure, and function, and were also considered in this analysis.

4.2.4.2 Impacts

Impacts from Vegetation—Forest and Woodlands Management

Research suggests that a number of management strategies and silvicultural practices can be used to enhance the resistance and resilience to climate change (Papadopol 2001, Noss 2001, Union of Concerned Scientists 2006). Under all Alternatives, BLM would implement the following measures to help forests adapt to the expected impacts of climate change:

1. Employ harvest methods (including use of helicopters) that minimize soil disturbance.
2. Maintenance of natural fire regimes.
3. Reforest immediately after harvest and utilize drought and insect/disease tolerant tree species in reforestation projects.
4. When artificial regeneration is utilized, apply site preparation and vegetation management techniques to reduce competition and establishment time.
4. Promote prescribed burning and understory thinning to reduce the risk of uncharacteristic wildland fire.
5. Retain large diameter trees.

Alternatives B, C, and D would complete the FORVIS inventory across the entire planning area to determine species composition and stocking levels. The amount of forest vegetation that would be treated ranges among alternatives from 1 percent to 12 percent. Treatments would move the composition, structure, and function of forest vegetation toward historic conditions. This would make the forest more resilient to insect infestations, disease, and fire. Effectiveness of treatments would vary among alternatives due to differences in acres to be treated, and types of silvicultural methods that would be used.

The remaining 88 - 99 percent of the forested vegetation would remain untreated. In this area nothing would be done to restore the forest vegetation types to their historic species mix, stocking levels, and structure. Therefore, stands would remain outside their normal range of variability. This would result in a forest that is less resilient to insect, disease, and fire due to high stand densities, existing disease and insect outbreaks, as well as increased fuel loading. Insect and disease activity are one of the most common sources of increased hazardous fuels in the planning area and are typically areas where forest health projects are conducted. As a result, it is estimated that less than one percent (Alternative C) to three percent (Alternative B) of areas impacted by insect/disease activity would be treated on an annual basis. Currently, 32 percent of all the forested vegetation occurs in areas where no treatment would be allowed to protect other resources.

4. Environmental Consequences

Effects on untreated areas by cover type would be:

Dry Conifer Type: Dry conifer types, historically dominated by ponderosa pine, would continue to be encroached by Douglas-fir and smaller ponderosa pine, increasing the tree density and continuing to skew the seral stage distribution. Early-seral stands would progress to mid- and eventually late-seral stands, but they would be in a closed (not open) canopy structure, which is currently lacking. This closed canopy, dense structure would continue to exacerbate the FRCC (see the wildland fire management section). Fires that are less frequent but high in intensity and severity would eventually affect these forest types, potentially converting a large percentage to early seral. These fires would likely burn at a severity that effectively removes the live large tree component (where it exists) of these stands (Keane et al. 2002). Only a few large trees may survive, leaving the other trees, killed by the wildland fire, as snags. In this situation, high-severity fire may result in soil damage that may limit the ability of these stands to successfully regenerate. Uncontrolled and unplanned fires burning in this type, given current and future fuel conditions, would exhibit fire effects outside of the historic conditions under which these sites developed. There is little opportunity for ponderosa pine or Douglas-fir to develop old growth characteristics under these conditions.

Wet/Cold Conifer Type: The Wet/Cold Conifer types, historically dominated by western larch, western white pine, lodge pole pine, mountain hemlock, Engelmann spruce, and subalpine fir with whitebark pine and Douglas-fir in lesser amount, would continue to lose the western white pine and white bark pine component due to blister rust. Douglas-fir would continue filling the niche once occupied by western white pine. This, combined with wildland fire suppression would result in increased tree densities and thus accelerated movement of these stands to the late seral stages dominated by Douglas fir, subalpine fir, mountain hemlock, and Engelmann spruce. The early seral structure class is severely deficient and the mid seral structure class is nonexistent. Currently only 6 percent of the early seral structure class exists in this vegetation type. It is expected that the amount of the early seral structure that will move into the mid seral structure class will be negligible over the next 15 years. Maintaining or increasing the amount of vegetation in the early seral stage will be the result of wildland fire or insect or disease infestation. Without wildland fire, it can be expected that the amount of this vegetation type in the early seral stage would decrease. Further, the closed canopy, dense structure composed of mostly species prone to root rot disease (Douglas-fir and true firs) would continue to exacerbate departure from historic fire conditions. Fires would likely burn at a severity that effectively removes the live large tree component (where it exists) of these stands and could cause soil damage, delaying regeneration of the affected areas. Only a few large trees may survive, leaving the other trees, killed by the wildland fire, as snags. Further, with blister rust present, successful regeneration of western white pine and white bark pine would be virtually impossible, which could result in this species being lost to this vegetation type unless rust resistant seedlings are planted.

Wet/Warm Conifer Type: The Wet/Warm Conifer types, historically dominated by Douglas-fir, western larch, western white pine, and western red cedar with grand fir, western hemlock, ponderosa pine, and lodge pole pine in lesser amounts, would continue to lose the western white pine component due to blister rust. Douglas-fir and grand fir are filling the niche once occupied by western white pine. Early seral stands would progress to mid and eventually late seral stands, but they would most likely be in a closed (not open) canopy structure (late seral closed cover type is half of what it was historically, while late seral open is one-third of the historical level). Because of the increased stocking levels of Douglas-fir and grand fir, forest health in this vegetation type is declining due to root rot, beetles, and other insects and diseases. Increased stand densities combined with increased mortality of Douglas-fir, western white pine, and grand fir would continue to exacerbate the departure from historic fire conditions. Fires that are less frequent but high in intensity and severity would eventually affect these forest types, potentially converting a large percentage to early seral

stages. Fires would likely burn at a severity that effectively removes the live large tree component (where it exists) of these stands and could cause soil damage, delaying regeneration of the affected areas. Only a few large trees may survive, leaving the other trees, killed by the wildland fire, as snags. Further, with blister rust present, successful regeneration of western white pine would be virtually impossible which could result in this species being lost to this vegetation type unless rust resistant seedlings are planted.

Alternative A: This alternative would not complete the FORVIS inventory but would use the existing 2002 FORVIS inventory and the 1993 extensive inventory to determine species composition, stocking levels, and diversity. Under Alternative A approximately 7,000 acres (eight percent) of the total forested vegetation, would be treated to restore forest health. About 92 percent of the forested vegetation would remain untreated. However, to put this into context, approximately 32 percent of all the forested vegetation occurs in areas where no treatment would be allowed to protect other resources. Acres of treatments by cover type are not specified because current management emphasizes production of forest products without regard to vegetation type. Historically projects were conducted where forest health was considered to be in jeopardy – vegetation type was not considered significant. Management actions emphasize reduction of stand density, as well as returning species composition to historic conditions, but do not consider restoration of structure to historic conditions. The most likely result of most treatment actions would be to maintain the mid and late seral stages and movement of many of the early seral stages toward the mid seral stages. Sustaining the early seral stages is likely to be minimal unless treatment to improve forest health required some kind of silvicultural regeneration treatment which is mostly likely to occur in the Wet/Cold vegetation type. Impacts by cover type are discussed below.

Dry Conifer. Management actions in this type would strive to restore historic composition, structure, and function by removing excess trees, concentrating on Douglas-fir, grand fir, and grand fir ingrowth, and reforesting with ponderosa pine. This would result in a species composition that more closely resembles the historic species distribution and would create more early seral structure. Currently 61 percent of the stands in this type are mid seral closed and nine percent are late seral closed. Removing the excess trees would move some of these stands back to a more open seral condition. Vegetation treatments in the early seral stages would encourage movement to a mid seral stage. Treatments in a mid seral stage would encourage movement toward a late seral stage.

Wet/Cold Conifer. Management action in this type would remove excess trees, concentrating on smaller diameter diseased and insect-infested grand fir and Douglas-fir, and retaining healthy Douglas-fir and western white pine. This would result in a species composition that more closely resembles the historic species distribution and would create more early-seral structure. Due to the emphasis on treatments inside the WUI, where this vegetation type occurs least, this type could receive the least amount of treatment.

Wet/Warm Conifer. Management actions in this type would reduce stocking levels of grand fir and Douglas-fir and increase stocking levels of western larch and western white pine. Silvicultural treatments would most likely strive to move stands toward the next stage in seral development. Both white pine and larch are moderately shade-intolerant, so successful treatment would also affect structure by reducing canopy cover and stocking. With the natural loss of white pine, maintaining the structure so that it can progress to a late-seral stage while maintaining the appropriate species composition is difficult in this type. Promoting historic structure and composition in this type would make it less susceptible to disease such as root rot in grand fir and more resistant to the effects of wildland fire. Western red cedar would not generally be affected because it occurs most abundantly in riparian zones, where treatments would not occur. When western red cedar occurs outside of riparian zones, removal would result in short-term slight reductions in this component.

4. Environmental Consequences

Alternative B: This alternative calls for restoration treatment of at least 9,600 acres, or approximately 12 percent of the total forested vegetation. This is four percent more than Alternative A. More forested vegetation would be restored to historic composition and function under this alternative, than any other. Approximately 88 percent of the forest vegetation would not be treated. However, to put this into context, approximately 32 percent of all the forested vegetation occurs in areas where no treatment would be allowed to protect other resources. When applying treatments in the vicinity of old growth stands (a component of late seral structural stages), treatments would fully maintain, or contribute toward the restoration of the structure and composition of old growth stands according to the pre-fire suppression old growth conditions characteristic of the forest type.

Dry Conifer: Treatments would promote retention of larger trees in stands where ponderosa pine are present and healthy (insect and disease levels are endemic). Over very long periods (more than 50 years), repeated low-intensity disturbance (such as fire or thinning) that removes smaller ingrowth would increase the representation of mid seral and late seral structural stages, which are currently underrepresented, particularly the late-seral stage. This would move the structural stage distribution to more closely represent the historic condition of this cover type. Old growth ponderosa pine stands are underrepresented in northern Idaho (mid seral, open), and this alternative would promote development and preservation of old growth ponderosa pine. It is estimated that approximately 3,400 acres in the cover type would be treated over a 15-year period.

In areas where ponderosa pine was the historic cover type, the ponderosa pine component has been lost through insect infestation, disease, fire exclusion, uncharacteristic stand-replacing fire, or harvesting; restoration would necessarily require vegetation treatments by removing most of the current stand and planting ponderosa pine. Ponderosa pine is shade-intolerant and requires open tree canopies to reproduce and thrive. This type of treatment would increase the acres that would be considered early seral, which would move the structure component more in line with historic seral stage distribution because early seral is underrepresented in the dry conifer cover type.

In habitat types that were historically covered with Douglas-fir, treatments could include removing insect-infested and diseased trees and reducing understory density. These treatments would not affect species composition but would have some effect on structure by promoting the mid seral open and late seral structural stages. Where stand density is reduced, remaining trees would not have to compete for water and nutrients and would be under less stress, making them more able to withstand insect attack. Douglas-fir is the most common type of old growth in northern Idaho, although it is not particularly long-lived, unlike coastal Douglas-fir. By the time Douglas-fir reach 230 years, they are exceedingly susceptible to Douglas-fir bark beetles and drought (Powers et al. 1999).

Wet/Cold Conifer: This alternative could treat the most acres in this cover type. It is estimated that approximately 5,200 acres in the cover type would be treated over a 15-year period. With the emphasis on regeneration harvest followed by reforestation with western white pine and western larch, more acres would be returned to the early seral structural stage, which is currently underrepresented in this cover type. Thinning and other stand density reduction treatments could move some stands into the mid seral stages which are also below historic levels.

Wet/Warm Conifer: Treatments in this type would reduce stocking levels of grand fir and would increase larch and white pine. These treatments would change the composition by removing grand fir and planting both white pine and larch. Both white pine and larch are moderately shade-intolerant, so successful treatment would also affect structure by reducing canopy cover and stocking. With the natural loss of white pine,

maintaining the structure so that it can progress to a late-seral stage while maintaining the appropriate species composition is difficult. Promoting appropriate structure and composition in this type would make it less susceptible to disease such as root rot in grand fir, would reduce insect infestations, and would make it more resilient during fire. It is estimated that approximately 1,000 acres in the cover type would be treated over a 15-year period.

Alternative C: This alternative allows for restoration treatment of at least 1,200 acres, which is approximately one percent of the forested vegetation. This is 83 percent less than current management, and approximately 99 percent of the total forested area would receive no treatment. However, to put this into context, approximately 32 percent of all the forested vegetation occurs in areas where no treatment would be allowed to protect other resources. Silvicultural treatments are limited under this alternative. Therefore, in addition to fewer acres being treated, the effectiveness of moving the three vegetation types may not be as effective (moving more slowly toward to the goal) compared to the other three alternatives. Most management actions would be part of mitigation measures applied to forest vegetation experiencing natural disturbances, which in most cases would be wildland fire.

Dry Conifer. Where treatments occur, effects would be similar to those described under Alternative B. At the level of treatment proposed, restoration is limited to a small percentage of the type. For this reason, effects on this type would continue as under current conditions. It is estimated that approximately 400 acres in the cover type would be treated over a 15-year period.

Wet/Cold Conifer. Treatments in this cover type would result in reducing the amount of Douglas-fir and grand fir, and increasing the amount of western white pine. It is estimated that approximately 700 acres in the cover type would be treated over a 15-year period. Naturally generated white pine is susceptible to white pine blister rust, but white pines that have been selected for their natural resistance to the disease have been reproduced in nurseries and are available for planting in the hope that they can survive and reproduce in the wild.

Wet/Warm Conifer. Where treatments occur, effects would be similar to those described under Alternative B. It is estimated that approximately 100 acres in the cover type would be treated over a 15 -period. At the level proposed, not enough treatment would occur across the landscape to restore structure and composition to the extent that reductions in insect and disease would occur, nor would there be any increase in the acres that developed into old growth.

Alternative D: This alternative calls for restoration treatment of at least 8,200 acres, or approximately 10 percent of the forested vegetation. This is only two percent more than Alternative A. Approximately 90 percent of the forest vegetation would not be treated. However, to put this into context, approximately 32 percent of all the forested vegetation occurs in areas where no treatment would be allowed to protect other resources. It is estimated that approximately 2,900 acres in the Dry Conifer cover type, 4,500 acres in the Wet/Cold Conifer cover type, and 800 acres in the Wet/Warm cover type would be treated over a 15-year period. Effects would be the same as Alternative B, adjusted slightly for the difference in acres treated. Alternative D allows for a wider range of silvicultural treatments (including fire) than any other alternative. Therefore treatments would likely be more effective at restoring historic conditions.

Impacts from Fish and Wildlife Management

Fish and wildlife habitat management direction impacts forest vegetation primarily through restrictions it places on vegetation treatments.

4. Environmental Consequences

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) contain requirements and methods for protecting native fish habitat, including water quality. These include maintaining bank stability and adequate riparian vegetation cover. Restricting disturbance in riparian areas would allow some mid-seral riparian forests to eventually transition into late-seral, which would more closely resemble historic conditions.

These restrictions would likely prohibit treatments for improving species composition in wet/cold conifer and dry conifer sites on upland landslide-prone areas; however, vegetation management goals can be met outside of these areas. Restricting disturbance in riparian areas would allow some mid-seral riparian forests to eventually transition into late-seral, which would more closely resemble historic conditions.

Alternative A: Maintaining a 100-yard buffer around raptor nests would restrict vegetation treatments within a 6.5 acre area around each nest site, which may reduce the effectiveness of some vegetation treatments where undesirable trees must be left in the buffer. These would then continue to produce seed, affecting the species composition and structure, and could eventually increase fuel levels.

Deer, elk, and moose habitat is within all the forested vegetation cover types in the planning area. Direction for management of big game habitat may limit the effectiveness of vegetation treatments to achieve historic conditions in these areas.

Small clear-cuts for grouse habitat would be consistent with the goal of using vegetation treatments. When applied in the appropriate situation, clear-cuts would result in increased early seral vegetation.

Since this alternative does not call for treatment of all the mature forest, some old growth, a partial component of late seral structure, could continue to develop over time. However, there are no specific protections for old growth included, so it would not necessarily be preserved.

Alternative B: Impacts would be similar to Alternative A. However, maintaining stand structure in a 50-yard buffer for raptors would provide fewer restrictions on treatments. A 50-yard buffer amounts to approximately 1.5 acres per nest. Treatments to improve structure and species composition would still be effective in the forested stand with these buffers. Restricting human activity within a 50-yard buffer around active raptor nests would not have a noticeable impact on forested vegetation, other than those described above.

Also, maintaining and enhancing old growth forest stands (a component of late-seral forest) for furbearer habitat would maintain, enhance, and possibly increase late-seral closed conditions. Late-seral closed forest is overabundant in the wet/cold type. This action would prohibit restoring the historic structure in this type in some areas. However, late seral is underrepresented in other cover types, so enhancement and maintenance would be consistent with returning to historic conditions.

Alternative C: Impacts would be similar to those described under Alternatives A and B. The buffer for raptor nests would be 100 yards, as in Alternative A.

This alternative differs from Alternatives A and B, in that there are no actions to improve or protect grouse habitat, as would occur under all other alternatives. Forest vegetation would be minimally managed, and natural recovery would likely improve long-term benefits to grouse during the life of the plan.

There is more emphasis on retaining large trees, and maintaining and enhancing old growth/late successional forests over that described under Alternative B. Alternative C calls for retention of all trees over 21 inches to provide future snags. This requirement would curtail the effectiveness of some treatments to correct species composition or structure. Particularly in the dry conifer cover type, fire cannot be easily reintroduced without

some pretreatment to reduce fuels, and without pretreatment, fires would be more likely to kill or partially consume larger diameter trees and logs. In Wet/Cold and Wet/Warm conifer types, large tree retention can be more easily incorporated into treatments while meeting goals. However, fires in these types are often stand-replacing, so it is important to recognize that restoring fire to its natural role would result in a loss of some of the trees, snags, and logs over 21 inches. Removing trees of all sizes that are adversely affecting the species composition and structural stage distribution is required in the forested vegetation types. Some larger older trees are more able to withstand fire, but in situations where there is a buildup of fuel and ladder fuels, even these would be lost. Some trees over 21 inches in diameter may need to be removed to protect public safety or may be removed by firewood cutting.

All forested vegetation treatments could result in a “take” of migratory birds, depending on the determination of a take, which would effectively eliminate all forested vegetation treatments between May 15 and July 15. This is often the period when spring prescribed burns would occur. This requirement would often eliminate the use of prescribed fire to reduce fuels, preventing the opportunity for fire to return to its historical role.

Also, this alternative calls for uneven-aged silvicultural management techniques, which may not be appropriate in all of the forested vegetation types, depending on the objective. For example, where changing the species composition is important, uneven-aged management may not be appropriate.

Alternative D: Impacts from fish and wildlife are same as Alternative B, except that the buffer of 50 (urban/rural areas) or 100 yards (outside urban/rural areas) around raptor nests would have the same effect as described in Alternatives B and A respectively.

Impacts from Special Status Species Management

Restrictions (e.g., RCAs, timing, avoidance) for protection and recovery of special status species, including riparian buffers under INFISH or CNFISH (depending on the alternatives), could impact when and where vegetation management activities may occur. Treatment goals for each alternative could be met across the planning area by managing vegetation where threatened and endangered plants and animals do not occur or where the actions would protect and conserve the species. Special protection for sensitive species could prohibit correcting forest species composition and structure in some areas.

Actions to preserve snags for snag- and cavity-dependent species could require adjustments in vegetation treatments. In order to meet treatment goals, BLM may need to alter the size, timing, or prescription of treatments, but not enough to affect overall species composition and structure for a vegetation type.

When additional species are added to the special status species list (or removed), related impacts on opportunities for achieving the goals for forest and woodland vegetation could result.

In addition, the action alternatives (Alternatives B, C, and D) identify conservation measures for caribou, lynx, and wolves that could affect forest vegetation. Caribou habitat occurs in the northern part of the CdA FO, where the vegetation cover types are largely wet/cold conifer. As the major agent of change under this alternative, restricting fires to small areas would limit the acres of this type that could be restored to historic conditions, including structure and composition, by use of fire. Effects from this would be minimal, as only 89 acres of this habitat occurs in the CdA FO. Standards identified in the Northern Rockies Lynx Amendment could delay implementation of treatments to change the composition and structure of forested vegetation, particularly wet/cold conifer, by prohibiting thinning of seedling-sized trees in lynx habitat. This would affect 502 acres of lynx habitat. These treatments could occur when the trees have surpassed the seedling size, and therefore could be successfully implemented at a later date. Conservation measures for

4. Environmental Consequences

wolves would restrict activities within one mile of den and rendezvous sites. This would limit activities to improve species composition and structure in some locations.

Alternative D: Impacts under Alternative D would be the same as Alternative B, except as follows.

Alternative D contains additional measures to conserve threatened and endangered species. These conservation measures include limiting motorized access to species habitat, timing limitations on authorized actions, modifying any activity impacting a threatened or endangered species, and reviewing fire management plans for consistency with conservation measures. Impacts from access restrictions would be the same as described under Travel Management and Transportation. Timing requirements may influence the timing and scheduling of vegetation management actions but are not expected to eliminate or make them less effective, and therefore, timing would not affect the overall species composition or structure of forests. The requirement to modify actions which impact listed species could impact vegetation management, depending on the species affected, and could potentially limit treatments designed to improve forest composition and structure or reduce the risk of insect and disease mortality. Reviewing fire management plans and modifying them could affect species composition and structure, depending on what the modification entails and where the modification occurs. The same can be said for restrictions on burning some areas, such as areas adjacent to white sturgeon critical habitat. Requirements for MIST and the location of fire base camps may affect fire suppression and result in more acres burned.

Impacts from Wildland Fire Management

Fire affects forest structure and is one component of forest ecosystem function. Fire suppression over the past 100 years is one of the leading causes for the departure of forest vegetation from historic structure and function in frequent, low and mixed severity (HFR I, II, and III) vegetation cover types. Low intensity fire can thin stands, thereby promoting open mid- and late-seral stages, and removing undesirable species. High-intensity fire can be stand-replacing, returning stands to the early seral stage.

As called for under all alternatives, repairing or improving fire-damaged lands may include replanting with trees; assuming the appropriate species are used, this would improve the species composition and create healthy early-seral forest in all vegetation types.

Fuel reductions, thinnings, and WUI treatments would occur under all alternatives, and can affect forest structure but would not affect species composition, unless overrepresented species are specifically targeted. Fuel reduction and thinning could change the structure from closed to open where treatments occur. Over time, these treatments could reduce the acres of forest burned by wildland fire, affecting early-seral and late-seral structural stages. If this reduction includes a reduction of uncharacteristic stand-replacing fire, it would serve to maintain the desired species composition.

Under current management, fire suppression would continue to create species composition and structural stages that do not match the historic conditions, and prevent fire from resuming its historic role as a component of historic function.

Under the action alternatives (Alternatives B, C, and D), appropriate management response would consider the impacts from wildland fire and determine when it is appropriate to let areas burn or to provide emergency stabilization actions. Species composition and structure would generally become more like historic conditions. In the long term, more areas would be suitable to allowing fire to play a more natural role, because fuel conditions would be more like what was represented historically.

The action alternatives also allow for wildland fire use on 52,319 acres as a tool to return fire to its historic role. Fire use can also help restore historic species composition and structure in all the forested vegetation types. Over time, wildland fire use could reduce the acres of forest burned by unwanted wildland fire, affecting early-seral and late-seral structural stages. If this reduction includes a reduction of uncharacteristic stand-replacing fire in frequent, low and mixed severity vegetation cover types, it would serve to maintain the desired species composition.

Impacts from Visual Resources Management

VRM Class I is the most restrictive VRM classification, but only occurs in WSAs where management actions for forest vegetation are generally prohibited. Impacts of WSAs are discussed below under Impacts from Special Designations.

VRM II classification allows only low levels of change to the landscape. Vegetation treatments designed to meet this objective may be less effective at restoring historic conditions. VRM Class II designation would not prevent vegetation management goals from being accomplished, because acres outside of VRM Class II areas could be treated to meet the goals. Restrictions from VRM II could lengthen the time needed to return designated areas to historic conditions, due to limitations on the area to be treated, and/or the amount of vegetation that may be removed or altered. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over the current area), and 23,551 acres for Alternative D (a 65 percent increase over the current area).

VRM Classes III and IV allow moderate and major changes to the visual landscape respectively and therefore would not affect forest vegetation.

Impacts from Forestry and Woodland Products Management

Forestry activities would be accomplished to meet vegetation treatment goals and objectives; therefore, the effects of forestry and woodland products are discussed in Impacts from Vegetation-Forests and Woodlands.

Impacts from Renewable Energy Management

The use of renewable energy sources (under Alternative A) or biomass for energy (under Alternatives B, C, and D) could affect forested vegetation structure in the future by removing small-sized trees. Currently, and for the foreseeable future, biomass used for renewable energy is a byproduct of forest vegetation treatments and is material that normally would be piled, burned, or left in place. Future use could include removing small trees of any species for the sole purpose of renewable energy. This could impact forest composition and structure by reducing the acres of early-seral stage, which is lacking in dry conifer and wet/cold conifer, or reducing the mid seral stage, which is overabundant in all forested vegetation types.

Impacts from Special Designations:

Farnham Forest and Lund Creek RNA/ACECs would promote old growth forest. There are also 19,077 acres of forested vegetation within WSAs. No vegetation treatments are allowed within the WSAs. The impact on these acres would be as described above for the untreated area under Impacts from Vegetation – Forests and Woodlands Management. Vegetation treatments would also not be allowed within one-quarter mile of river segments which are eligible or suitable for wild designation under the Wild and Scenic Rivers Act, or within some ACEC/RNAs (Hideaway Islands, Farnham Forest, and Lund Creek RNAs). However, most of these areas are within WSAs, and the small area that is not would have no notable impacts on forest vegetation, unless released by Congress for multiple use.

4. Environmental Consequences

4.2.4.3 Cumulative Effects

Effects on forested vegetation from any of the alternatives is overshadowed by reasonably foreseeable uncharacteristic fires; continued fire suppression necessary due to the WUI situation and intermingled land ownership; and large-scale insect and diseases that would continue throughout the planning period.

Revision of the Idaho Panhandle National Forest Plan could result in more or less treatment of adjacent areas, although, because no decision has been made, the effects are unknown. Wildland fire management on US Forest Service lands will be determined in the plan decision, particularly areas where wildland fire use may occur. BLM would need to coordinate with the US Forest Service on all wildland fire use actions and events. Wildland fire use on US Forest Service lands may allow species composition and structure of forests on BLM lands to remain unchanged, or to move further outside of historic conditions.

Additionally, decisions to increase the level of wildland fire use or prescribed fire, along with agricultural field burning could impact the BLM's ability to use wildland fire and prescribed fire for forested vegetation management due to air quality concerns and the need to meet other air quality requirements. This could postpone or eliminate fuel reductions or vegetation treatments to improve forest species composition and structure.

Root rot has and will continue to cause mortality in Douglas-fir and grand fir. When areas heavily infected with root rot are harvested, root rot disease often spreads to the residual Douglas-fir, grand fir, and any true firs. Insect infestations could be exacerbated by inappropriate management, which could affect BLM lands. Additionally, a lack of appropriate treatment or lack of wildland fire suppression or fuel reduction treatments could cause more mortality on BLM lands when wildland fire or insects spread. These impacts could affect species composition and stand structure.

Population increases are likely to expand the WUI, which in turn could alter forest management, taking the emphasis off restoring historic composition and structure and focusing more on fuel reduction (albeit, these are sometimes the same). Additionally, the Idaho Statewide Implementation Strategy for the National Fire Plan may alter forest management in the WUI as more money becomes available and mitigation plans are implemented. These activities could result in stand structure changes, but probably no species compositions changes.

Effects on forested vegetation due to management accomplished by other landowners could affect forested vegetation on federal lands. When activity fuels are not treated adequately on adjacent lands, fuel hazard could increase, affecting fire intensity and severity on BLM lands.

Timber companies and private land owners with large holdings within the planning area are generally managed for commercial gain. Likewise, state forested lands are usually managed by the Idaho Department of Lands (IDL) to maximize revenue. These management strategies favor shorter rotations, resulting in forest ecosystems ranging from early seral stages (seedlings and saplings) to forests in mid-seral stages (early mature to mature). It is not cost effective to manage forests on these lands for mature or later seral stages, thus these forest ecosystems will not be allowed to develop beyond the mature stage. This applies to most but not all private forest lands, as some are never harvested, and others may be managed for other uses. The amount of private and state lands that are in early seral stages is not reflected in the historic conditions discussed in Chapter Three, which is an analysis of BLM lands only. Thus, at the regional or landscape scale, private and state lands would add to the quantity of lands currently in early and mid-seral stages.

The IPNF Analysis of the Management Situation for their plan revision, and their adherence to the ICBEMP Strategy, indicate that the USFS will also manage its lands in the planning area to restore historic composition, structure, and function. This strategy will likely promote development of more stands in later seral stages, compared to private and state management.

While Alternatives A and C should tend to move public lands to later seral stages in development, the objective on BLM lands under these alternatives is to achieve the historic species composition, not structure. On the other hand, restoring historic structure is an objective for Alternatives B and D, which would generally promote later seral stages. BLM management of stands for later seral stages would compliment USFS management, while management on private and state lands would generally add to the occurrence of early and mid-seral stages on federal lands. However, some treatments on federal lands (e.g., treatments of insect infestations or diseased stands) would return stands to early seral stages, adding to private and state lands in these stages. Also, lack of treatment in root rot areas, widespread mountain pine beetle attack, or even ice/wind storms can return stands on federal lands to early seral.

IDL and many larger timber companies often reforest treated lands with Ponderosa pine, western larch, and rust-resistant western white pine. IPNF restores historic species composition through reforestation. When combined with these land owners, BLM actions that would restore historic composition under all alternatives would contribute to regional restoration of historic species composition. However, other private lands may be artificially reforested with the cheapest available seedlings or may not be artificially reforested, relying instead on natural regeneration to reforest their lands. In these cases, reforestation would usually allow non-historic species composition to return or continue, adding to the deviation from historic conditions on untreated BLM lands.

4. Environmental Consequences

4.2.5 Vegetation – Riparian and Wetlands

4.2.5.1 Methods of Analysis

The health of riparian zones and wetlands is measured by water quality, vegetative cover and diversity, and various functions such as the area's ability to stabilize shorelines and stream banks, delay flood water, filter sediment, and aid in floodplain development. Other parameters used to determine riparian and wetland health include having the age class and structural diversity of vegetation that is appropriate for the site and the occurrence of noxious weed species. A healthy riparian zone will consist of a mixture of early, mid, and late seral stages with herbaceous and multi-aged woody species, more stable soils, plentiful vegetation production, and diversity of vegetation.

All of the factors mentioned above are used to determine whether a stream or wetland is in PFC. Impacts arise when an activity affects any of these parameters, which would in turn affect whether the area is in PFC, or moving toward PFC. Each alternative was analyzed to determine its effect on this indicator.

4.2.5.2 Impacts

Impacts from Vegetation-Riparian and Wetlands

Completing a riparian assessment would allow for increased monitoring and development of realistic periodic goals. Over time, this would allow for more effective management of riparian resources, increasing the total in PFC. Implementing INFISH and CNFISH would protect and enhance riparian and wetland vegetation, increasing and maintaining the amount of land in PFC. Current Management (Alternative A) and Alternatives C and D call for achieving PFC for 75 percent of riparian and wetland areas, while Alternative B calls for only 50 percent. Thus, Alternative B would allow for more impacts on riparian and wetland vegetation than the other alternatives.

Impacts from Soil Resources Management

All alternatives would require implementing appropriate BMPs to protect soil and water resources. Similarly, management activities under any of the alternatives must comply with the Idaho Forest Practices Act and the Clean Water Act, which establish additional BMPs and impose penalties for water quality degradation from eroded sediments. To reduce the potential for mass wasting, all alternatives also have special management requirements when actions are proposed in landslide prone areas. The action alternatives (Alternatives B, C, and D) outline more specific direction (i.e., avoid locating roads or timber harvests on, or adjacent to landslides) than current management, so would have greater effect on reducing the potential for mass wasting. Reduced soil erosion and mass wasting would help maintain or improve the functioning condition of riparian and wetland vegetation.

Impacts from Water Resources Management

Under all alternatives, effective watershed management would result in healthy and diverse plant communities. Restricting surface disturbance around wetland/riparian areas, perennial surface waters, identified flood plains, and ephemeral channels would further protect vegetation from disturbance. Considering water quality standards and watershed guidelines during construction of other program actions and events would assist in achieving the desired plant and litter cover objectives. All of these would contribute to maintaining or improving functional conditions of riparian and wetland vegetation.

Impacts from Vegetation-Forests and Woodlands Management

Actions under all alternatives aim to restore historic forest conditions. This would benefit overall forest ecosystem health, including riparian zones, thus promoting long-term increases in PFC. However, forest

vegetation treatments would involve road construction and use, and prescribed burning, which can cause soil erosion, remove riparian vegetation, and allow invasive species to establish. These effects would be minimized by implementation of BMPs, requirements of INFISH/CNFISH, and invasive species treatments, but the short-term impacts would still include some reduction in riparian areas that meet or are moving toward PFC. Alternative A would treat 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C would result in an 83 percent reduction, while Alternative D would increase treatments 17 percent. Short- and long-term effects on riparian and wetland vegetation would be proportional to acres treated. Alternatives C and D would specifically conserve and restore aspen, birch, and cottonwood stands. This would maintain or improve the functional condition of riparian areas because these species are often associated with riparian zones.

Impacts from Vegetation-Invasive Species and Noxious Weeds Management

Weed management strategies under all alternatives would reduce competition between native riparian vegetation and invasive species, leading to healthier riparian zones, increasing areas in PFC.

Impacts from Fish and Wildlife and Special Status Species Management

Implementing INFISH (Alternative A) or CNFISH (Alternatives B, C, and D) would provide protection for riparian and wetland vegetation, thus maintaining or increasing areas in PFC.

Impacts from Wildland Fire Management

Large, high intensity wildland fires would remove the filtering duff layer in or near riparian areas. These large fires are far more likely to burn through riparian areas and impact whole drainages over the short and long term compared to smaller fires that fall within the natural range of variability. Under all alternatives, wildland fire suppression using the Appropriate Management Response would protect riparian vegetation from destruction, thus maintaining or improving areas in PFC. However, riparian vegetation could be affected if fire equipment needed to enter such zones for suppression tactics. Effects would include soil disturbance, which could facilitate weed growth, and loss of vegetation, which would degrade the functioning condition, compaction, and erosion. Implementing measures to stabilize burned areas within one year after fire containment would affect riparian areas by ensuring that proper conditions for vegetative regeneration would be present, thus promoting eventual return to PFC.

Fire suppression under Alternative A would take into consideration potential benefits to riparian vegetation from wildland fire on a case-by-case basis, leading to increased habitat quality and areas in PFC over time. The action alternatives identify 52,319 acres where wildland fire use would be considered. The short-term effect of fire use would be removal of riparian vegetation and degradation of functioning condition. However, the return of fire to its natural role in the ecosystem would lead to long-term enhancement of riparian vegetation, which would increase the potential for achieving PFC.

Impacts from Visual Resources Management

Visual resources management can indirectly impact riparian and wetland vegetation through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs, where most management activities are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation,

4. Environmental Consequences

in these areas. While 12-15 percent (varying slightly by alternative) of this VRM II area is within RHCAs/RCAAs where riparian vegetation is already protected, the constraints placed on actions within the remaining VRM II areas would reduce the potential for degradation of riparian functioning condition, corresponding in effect to the total area classified as VRM II.

Impacts from Forestry and Woodland Products Management

The impacts are the same as those described above under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Livestock Grazing Management

Livestock can impact riparian vegetation around watering locations by trampling and grazing plants, and by soil compaction, which reduces riparian species cover and diversity, and degrades functioning condition. Under Alternatives A and B, approximately 4,004 acres of land would be available for livestock grazing. Only 37 of these acres are within riparian zones. Alternatives C and D allocate only 1,218 acres for livestock grazing, with only 11 acres in riparian zones. Thus impacts on riparian vegetation from livestock grazing would be negligible under any alternative. Any impacts that might occur would be reduced by implementation of Idaho Standards for Rangeland Health and grazing guidelines from INFISH/CNFISH.

Impacts from Minerals Management

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) state that mining leaseholders may only place facilities in riparian buffer zones if project-specific assessment reveals that there would be no adverse effect on inland native fish. Mining facilities must be situated outside of RHCAs, except when there is no practicable alternative, and when it can be done in such a way that riparian habitat goals would not be compromised. This would eliminate most potential impacts on riparian vegetation from mining. However, it does not totally eliminate the potential that mining operations could be located in riparian areas where mining waste, vegetation removal, and erosion could cause degradation to functioning condition. Implementing BMPs, under all alternatives, for road building, storm runoff, and erosion control would reduce the potential for these effects.

Currently (under Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on riparian vegetation than Alternative C.

Impacts from Recreation Management

Generally, removal of and other damage to riparian vegetation from recreational use would be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres of riparian vegetation within SRMAs. Under Alternative A, SRMAs would cover 871 acres of riparian vegetation. Riparian vegetation within SRMAs under Alternative B would total 6,851 acres, with 5,424 acres under Alternative C, and 7,519 under Alternative D.

Impacts from Renewable Energy Management

Impacts on riparian and wetland vegetation from extraction of biomass fuels would be the same as those identified from vegetation treatments under Impacts from Vegetation-Forests and Woodlands. Road construction and use, or power line installation associated with wind energy development, could result in soil erosion or removal of riparian vegetation, which would degrade functioning conditions in riparian zones. Implementation of INFISH/CNFISH restrictions and BMPs under all alternatives would minimize these effects.

Impacts from Travel Management

OHV use (other than snowmobiles) can result in impacts on riparian vegetation, such as loss of vegetation cover and density, fragmentation of habitat, and composition changes. OHV users can introduce and spread noxious and invasive weeds. All of this would lead to degradation of the functioning condition within affected areas. In areas designated as open to off-road motorized travel, there is no restriction on vehicle uses within riparian areas, and thus no constraint on related impacts. In areas where motorized travel is limited to designated roads, impacts would be limited to those areas where designated roads run through or near riparian zones, thus greatly reducing widespread degradation. In areas closed to motorized vehicles, no impacts would occur. Thus, impacts from motorized vehicle travel would correspond to the amount of area designated open, limited, and closed under each alternative. Table 4.2.5-1 shows the acres with these designations within riparian buffer zones, by alternative.

Table 4.2.5-1 Acres of OHV Designations within Riparian Buffer Zones under All Alternatives

Alternative	Closed (acres)	Limited (acres)	Open (acres)
Alternative A	100	4,900	7,868
Alternative B	100	12,768	0
Alternative C	100	12,768	0
Alternative D	212	12,656	0

Impacts from Lands and Realty Management

ROW authorizations and land use permits are generally for activities such as road construction or facilities development. Construction, road use, and heavy equipment can cause soil erosion or remove riparian vegetation resulting in degradation to the functioning condition. Under current management there are no restrictions on ROW authorizations or land use permits. Thus related impacts on water resources could occur anywhere in the planning area, within the limits of INFISH restrictions. The action alternatives (Alternatives B, C, and D) each identify ROW exclusion areas where no ROW authorizations or land use permits would be allowed, and where ROW avoidance areas authorizations would only be allowed when there was no other practical location. All RCAs are identified as avoidance areas under the action alternatives. In addition, between 3,623 and 3,732 acres of RCAs fall within ROW exclusion areas. In addition, when actions are authorized within RCAs, CNFISH restrictions would apply. Thus, potential impacts from lands and realty authorization on aquatic habitat would be greatly reduced as a result of the actions within this section of the action alternatives. Land tenure actions that would acquire riparian and wetland areas, such as has occurred in many locations on Lake Coeur d'Alene, would provide further preservation and protection of this resource.

Impacts from Special Designations Management

Special designations, such as ACECs, could help to protect riparian and wetland vegetation, thus maintaining or improving PFC, by limiting uses. Localized protective management of stream segments found eligible or suitable for Wild and Scenic River designation could provide similar protection.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Riparian vegetation would be protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on riparian vegetation are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on riparian vegetation. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and

4. Environmental Consequences

Scenic River designation, would include protection of riparian vegetation. However, eligible segments include 14 miles of the Kootenai River, along which the BLM has only scattered ownership, and very little ability to influence riparian vegetation. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would actually be little added protection.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect riparian vegetation as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as unsuitable. Therefore they would not receive special management attention, and there would be no additional protection of riparian vegetation.

Alternative C: This alternative would protect riparian vegetation through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded. The portions of the Little North Fork Clearwater Headwaters ACEC that are outside of the Grandmother Mountain WSA, would be managed to protect habitat for fish, as would all of Wolf Lodge Bay ACEC, thus affording protection to riparian vegetation. All of Gamlin Lake and Killarney Lake ACECs would also emphasize protection of riparian and wetland habitat. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of the riparian vegetation that they contain. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

4.2.5.3 Cumulative Effects

Past, present, and reasonably foreseeable actions other than those proposed under various alternatives in this RMP that may affect riparian and wetland resources include livestock grazing, wildland fire and wildland fire use and suppression, fuel and vegetation treatments including prescribed fire, timber harvest, mineral and energy development, population growth, increased public awareness of values of riparian areas, increased recreational use, OHV use, changes in access, restoration of riparian zones and watersheds, regional planning efforts, levels of weed management, and designation of special management areas. The types of effects that have occurred and would continue to occur include diminished habitat value due to disturbances from grazing, mining, timber harvest, and livestock grazing, improved habitat conditions from restoration efforts, introduction of weeds and an increase in conditions that favor weed populations, and changes in habitat value due to wildland fire use and suppression.

Since the Emerald Empire MFP was adopted in 1981, there has been a tremendous increase in demand for motorized recreation. Four times more OHVs were registered in Kootenai County in 2003 than were registered for the entire state in 1981 (IDPR 2004). Advances in motorized recreational equipment have also increased OHV users' accessibility to areas that were previously remote and often inaccessible. Although this increase in demand is more often noticed in upland areas, effects are felt in riparian areas where trails fragment habitat and give users access to places that were formerly accessible only by foot, horseback, or boat.

Except in areas where prescribed fires have been implemented or wildland fire has been used for habitat improvements, suppression of wildland fire in the cumulative impact area has allowed for fuels buildup. The consequences of fuels buildup include contributing to higher intensity fire behavior, which is more likely to

cause severe fire effects on riparian areas than fires that occurred under historic fire regimes. Inappropriate burns may also reduce canopy cover in the short term, reducing a riparian area's roles in terms of cover for wildlife and retention of thermal quality. Although the proposed RMP addresses issues relating to fire use and suppression, this may not be the case in areas managed by other entities. In such cases, the overall effect to riparian zones throughout the cumulative impact area may include reduced efficacy as distribution corridors for fish and wildlife, due to varying degrees of the quality of habitat throughout a given stream corridor.

Function and value of riparian zones is addressed in several planning documents regarding large tracts of land in the cumulative impact area. The ICBEMP lists planning criteria specific to preservation and restoration of riparian areas. Management of the IPNF includes riparian preservation measures similar to those proposed by BLM for the CdA RMP. Effects of preserving and restoring riparian areas within the CdA FO include being part of a regional effort to preserve or enhance riparian habitat throughout northern Idaho, eastern Washington, and northwest Montana.

Historically, riparian zones have not been affected by invasive species to the same degree as upland or grassland areas. However, ongoing disturbance of soils and vegetation in riparian areas in and around the CdA FO has led to an increased risk of weed infestation, and such disturbance will likely increase with the increased public use of OHVs and possible increases in numbers of grazing livestock.

Actions related to mineral development have had an effect on riparian resources. Historic mining operations throughout the cumulative planning area have been located in riparian zones, to the detriment of soils and vegetation. Efforts on the part of land management agencies throughout the cumulative planning area to remediate AMLs will allow for restoration of the biological aspects of these sites. Furthermore, stipulations against siting mining facilities in riparian areas are in place in many parts of the planning area.

A projected increase in sand and gravel mining in the cumulative planning area could have direct effects on soils and substrate in riparian areas, leading to increased erosion and degradation of bank conditions.

Cumulative effects would be similar among the alternatives. Alternative A would contribute to more regional cumulative effects resulting from open OHV use, relatively high levels of grazing, and fewest number of riparian acres in NSOs. Alternatives B, C and D provide more management measures than Alternative A that would directly or indirectly reduce the potential for impacts. The emphasis in Alternative C on actions that value resource conservation, protection and minimal human intervention would have the least impact or risk of impacts on riparian and wetland resources and would contribute the least to cumulative impacts.

4. Environmental Consequences

4.2.6 Vegetation – Nonforested

4.2.6.1 Methods of Analysis

Indicators that were used to quantitatively and qualitatively assess management changes that could affect nonforested vegetation management include the following:

- Change in acres of mid-elevation shrub and perennial grass
- Change in composition and structure
- Potential for invasive and noxious weed infestation

Impacts were determined by assessing which actions, if any, would change the vegetation occurrence, structure or composition, or allow for increased dominance of invasive weeds.

4.2.6.2 Impacts

Impacts from Vegetation-Nonforested Management

Alternative A: Current management only calls for meeting Idaho Rangeland Standards and Guidelines. This would require maintaining existing native plant communities and would also require nonnative plant species used for restoration to be appropriate for the restoration site. These actions would minimize the potential for changes to composition and structure and would help prevent the spread of invasive species.

Alternative B: This alternative is a little more specific about preventing tree species invasion (preventing changes in acres of occurrence of nonforest vegetation), but otherwise calls for natural recovery, which would offer the least protection of nonforest vegetation of any alternative.

Alternatives C and D: These alternatives specify the same action regarding tree invasion as Alternative B but also require active prevention of off-road motorized vehicle use in nonforested areas. This would lead to less disturbance of soil and vegetation and less opportunity for invasion by invasive species. This alternative also calls for active restoration through seeding, which would enhance the native plant base's composition and structure.

Impacts from Soil Resources Management

All alternatives call for implementation of BMPs that would reduce the potential for erosion and loss of topsoil in nonforested areas, thus reducing potential for impacts on nonforested vegetation. The action alternatives (Alternatives B, C, and D) outline more specific direction (i.e., avoid locating roads or timber harvests on or adjacent to landslides) than current management, so would have greater effect on reducing the potential for mass wasting that could damage or destroy nonforested vegetation.

Impacts from Vegetation-Forests and Woodlands Management

Impacts on nonforested areas from forest and woodlands management would be indirect under all alternatives and would relate to fire treatments and the need to access treatment areas through nonforested areas. Fuels treatments that reduce the chances of large scale and/or high impact stand replacing wildland fire in forested areas would reduce the chances of such fires spreading into nonforested areas. Forest vegetation treatments that require the construction of access roads, fire breaks, or staging areas in nonforested areas would allow for greater weed dispersal and loss of nonforested vegetation. The magnitude of these impacts would somewhat correspond with the number of acres treated. Current management would result in treatment of approximately 7,000 acres. Alternative B calls for at least a 37 percent increase in treated areas,

while Alternative C calls for an 83 percent reduction over current management. Alternative D would involve a 17 percent increase over current levels.

Impacts from Vegetation-Invasive Species and Noxious Weeds Management

Weed management alternatives under all alternatives would directly affect nonforested vegetation areas equally by reducing or controlling the degree to which plants would have to compete with weeds.

Impacts from Fish and Wildlife Management

All alternatives call for closing certain roads. This would decrease chances of noxious weed transport and soil disturbance in all vegetation types where such management would occur.

All alternatives call for protection and enhancement of big game habitat. Since nonforested vegetation provides most big game forage, such objectives and related actions would result in maintenance or increases in nonforested vegetation. Alternatives C and D are more specific, and call for rejuvenation and enhancement of the shrub and herb (nonforested vegetation) components for big game winter ranges.

All alternatives, except Alternative C, call for creating small, temporary clear-cuts for grouse habitat. This would result in more nonforested vegetation in the short term.

Impacts from Wildland Fire Management

Under all alternatives, full fire suppression would promote encroachment of forested vegetation into areas with nonforested vegetation, resulting in less nonforested vegetation over time. Activities associated with fire suppression can also spread invasive species. Appropriate management response would consider areas where full suppression is not appropriate. Wildland fire suppression would also result in persistent shrubs becoming decadent and increasing fuel loading in these areas, increasing the chances of hot, destructive wildland fires in the future, further reducing nonforested vegetation and potentially changing its composition and structure. Such fires can also create conditions that promote spread of invasive species. Although current management does not identify any fire use areas, the action alternatives (Alternatives B, C, and D) identify 52,319 acres where wildland fire use would be considered. This could result in burning of both forested and nonforested vegetation, which could lead to more nonforested vegetation in the short-term. However, in the long-term forested vegetation would return to previously occupied areas. Once fire has returned to its natural role, forested and nonforested vegetation would be more resilient.

Impacts from Visual Resources Management

VRM Class I is the most restrictive VRM classification, but only occurs in Wilderness Study Areas (WSAs) where management actions that would affect vegetation are generally prohibited. Impacts from WSAs are discussed below under Impacts from Special Designations.

VRM II classification allows only low levels of change to the landscape. This would generally result in maintenance of existing nonforested vegetation, or would allow change to occur over long periods of time so that the change to the landscape is not noticeable. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations).

VRM Classes III and IV allow moderate and major changes to the visual landscape respectively, and would place no meaningful restrictions on actions that would affect nonforested vegetation.

4. Environmental Consequences

Impacts from Forestry and Woodland Products Management

Impacts from forestry and woodland products management would be the same as described in Impacts from Vegetation-Forests and Woodlands Management, above.

Impacts from Recreation Management

Generally, removal of and other damage to nonforested vegetation from recreational use, would be less in SRMAs than in the ERMA. Thus the potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 246 acres of nonforested vegetation within SRMAs. Alternative B would increase this to 5,138 acres. Under Alternative C, 4,475 acres are within SRMAs, and Alternative D has the most with 6,070 acres within SRMAs. Thus Alternative D would reduce impacts on nonforested vegetation more than any other alternative.

Impacts from Transportation Management

OHV use would result in impacts on nonforested vegetation, such as loss of vegetation cover, density, and composition changes. OHV users would introduce and spread noxious and invasive weed seeds from their vehicles, shoes, clothing, and recreational equipment. As OHV use increases, people from outside the area could bring in noxious and invasive weeds, including new invasive species. OHV activities in undisturbed and remote areas have the potential to distribute weed seeds into weed-free areas. The travel management section of the alternatives focuses on management direction for motorized vehicle use. In areas open to off-road motorized vehicle use, impacts can be widespread. In areas where motorized use is limited to designated roads, impacts would be concentrated. In these areas management actions, such as treatments for invasive species, could be more effectively implemented to mitigate impacts. No impacts would occur in areas closed to motorized vehicles. No notable impacts would occur from snowmobile use. Table 4.2.6-1 shows the acres of nonforested vegetation with motorized vehicle designations by alternative.

Table 4.2.6-1 Motorized Vehicle Designations on Nonforested Vegetation by Alternative

Alternative	Closed (Acres)	Limited (acres)	Open (acres)
A	35	2,471	5,328
B	35	7,899	0
C	41	7,793	0
D	135	7,699	0

Impacts from Lands and Realty

The installation of utility systems and other ROW actions would result in short-term vegetation removal until the area has been reclaimed. Shrubs would return over a longer time period. Long-term impacts would mostly be associated with the construction of access routes. Increased erosion and decreased vegetation cover would occur from soil compaction and the channelization of surface runoff in ruts and road ditches. Areas below mid-slope roads would become drier, which reduces plant productivity and can potentially change species composition.

Alternative A: Under current management there are no restrictions on ROW authorizations or land use permits. Thus, related nonforested vegetation could occur anywhere in the planning area. The action alternatives (Alternatives B, C, and D) each identify ROW exclusion areas where no ROW authorizations or land use permits would be allowed, and ROW avoidance areas authorizations would only be allowed when there was no other practical location. The table below (Table 4.2.6-2) shows acres within ROW exclusion and avoidance areas, by alternative.

Table 4.2.6-2 Nonforested Vegetation within ROW Restrictions by Alternative

Alternative	ROW Exclusion (acres)	ROW Avoidance (acres)
A	0	0
B	1,355	2,369
C	1,859	4,652
D	1,380	936

Impacts from Special Designations Management

This plan does not designate WSAs; however, existing WSAs contain approximately 1,355 acres of nonforest vegetation. Most activities that would impact nonforested vegetation are not allowed within WSAs. As discussed in previous sections, most of the other special designations (ACEC/RNA, WSR eligible/suitable) identified in the alternatives overlap with the WSAs, thus not affording any additional protection. Additional protection would be provided to the grassland remnant community at Windy Bay through RNA/ACEC designation, which includes ROW exclusion.

4.2.6.3 Cumulative Effects

Much of the nonforested vegetation in the CdA FO is noncontiguous, meaning that it is heavily affected by management actions aimed at other resources. Past, present, and reasonably foreseeable actions that are relevant to nonforested vegetation in the cumulative assessment area include wildland fire and wildland fire use and suppression, fuel and vegetation treatments including prescribed fire, timber harvest, mineral and energy development, population growth, growth in recreational uses, and OHV use. Population growth has caused development of nonforested areas and would continue to put pressure on nonforested areas. For example, valley bottoms and Rathdrum Prairie around Coeur d'Alene have been converted to urban/rural uses. Additional types of impacts that have occurred and would continue to occur include conversion to other habitat types, loss of area from mining, weed encroachment, and disturbances from OHV use.

Although nonforested vegetation comprises only a small percentage of the CdA FO, it is more widespread in surrounding areas. However, nonforested vegetation types are of increasing importance since much of what was historically grassland and shrubland of the cumulative assessment area has been converted to other cover types or has been heavily grazed. For example, much of adjacent eastern Washington has been converted to farmland from Palouse Prairie, which was formerly almost exclusively grassland. Likewise, a much higher percentage of the adjacent CFO is nonforested.

Effects throughout the cumulative assessment area from OHV use would increase as the number of OHV users increase. Effects would include soil disturbance, spread of noxious weeds, loss of vegetation, and habitat fragmentation from trail development.

Fire suppression in many areas, especially the WUI, would continue to affect grasslands by favoring woody species, leading to the encroachment of shrubs and trees. Wildland fire use and use of prescribed fire throughout the cumulative assessment area could result in improved conditions in nonforested vegetation by letting fire play its natural role in the ecosystem.

Because access through nonforested areas is often easier than through forested areas, such areas may be indirectly affected by mining and logging in adjacent areas. Restrictions on roads in many areas will diminish these effects to a certain degree, but if the overall trend in northern Idaho is towards greater resource utilization, such effects will increase over time throughout the cumulative assessment area.

4. Environmental Consequences

Although nonforested areas in the CdA FO are not grazed by livestock, this habitat type can be severely affected by grazing practices in adjacent areas. Livestock grazing management varies according to the agency that manages a given landscape, so it is difficult to determine a trend towards greater or fewer effects from grazing.

4.2.7 Vegetation – Invasive Species and Noxious Weeds

4.2.7.1 Methods of Analysis

Objectives and actions for each alternative were analyzed to determine whether they would change the occurrence of invasive species.

4.2.7.2 Impacts

Impacts from Vegetation-Invasive Species and Noxious Weeds

All alternatives are specifically designed to contain the spread of weeds and to prevent new outbreaks. Although implementing the objectives and actions would not necessarily contain weed populations throughout the CdA FO, doing so would ensure that all management actions across the spectrum of resource topics would contain weed control components. Furthermore, following procedures in the Cooperative Weed Management Area Operating Plans would commit the BLM to regional weed control efforts through cooperation with other resource agencies, private groups, and nonprofit entities that are committed to weed control. These actions would be moderately sufficient to contain the spread or introduction of weeds. In addition to the direction common to all alternatives, approaches to controlling invasive species that involve herbicide applications could also reduce plant productivity of nontarget native and desirable nonnative species. Alternative C establishes vehicle wash requirements, which would further diminish the potential for weed transport.

Impacts from Soil Resources

Management actions under all alternatives which are aimed at maintaining or improving soil conditions and minimizing soil erosion would also maintain or improve the condition of vegetation. In order to assure protection, management activities would incorporate BMPs (see Appendix A), require reclamation, and limit surface disturbance on sensitive or erosive soils. The effect of soil management would be to improve overall ecological conditions for native vegetation, while reducing the potential for invasive and invasive species to invade and expand their range.

Impacts from Water Resources

Effective watershed management would result in healthy and diverse plant communities and would minimize the establishment of noxious and invasive weeds. Minimizing erosion and protecting the soil would help decrease the potential for weed establishment and spread.

Impacts from Vegetation-Forests and Woodlands Management

Treatment actions under all alternatives could include building new access and skidder roads, constructing staging areas, and vegetative alterations that would result in disturbance to soils and native vegetation. Trucks and equipment used to conduct treatments would likely spread invasive species into these disturbed areas. BMPs would reduce the potential for these impacts, but have proven not to be completely effective against the spread of weeds. Prescribed burns would occur in the cool seasons (April–June and September–November). These burns are usually much cooler on the soil surface and would not burn most root crowns of herbaceous plants. Prescribed fire would create disturbances with the potential to increase weed spread and invasion. In the short term, any disturbance would increase the potential for weed spread and invasion. In the long term, forests in treated areas would become more resistant to fire and disease, thus reducing opportunities for spread of weeds. Impacts would be proportional to the number of acres treated. Alternative A would treat approximately 7,000 acres. Alternative B would result in at least a 37 percent increase, while

4. Environmental Consequences

Alternative C would reduce treatments 83 percent. Alternative D would result in at least a 17 percent increase in treated area over current management.

Impacts from Vegetation-Riparian and Wetlands Management

Weeds can affect reestablishment of riparian and wetland vegetation and vegetative patterns, which can significantly affect restoration and long-term ecosystem health, as well as the ability to achieve PFC. Although weeds are not directly mentioned in the definition of PFC, effects of weed infestation could be sufficient to impair riparian function. Therefore, measures to ensure PFC of riparian areas would necessarily include an effective weed management program, resulting in better management control over weed populations. Alternatives A, C, and D set an objective of 75 percent of riparian areas being in PFC. Alternative B sets an objective of only 50 percent, and would thus be least effective at increasing management control over weed populations.

Impacts from Fish and Wildlife and Special Status Species Management

Weed control would be a central component of measures to restore, protect, and enhance aquatic, riparian, and wetland habitats, and would require implementing coordinated weed control measures. Both INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) guidelines require measures to ensure habitat quality and riparian function, which would necessarily include measures to control invasive species. The BLM would prepare and implement a comprehensive weed management strategy for the 12,869 acres of riparian buffers in the CdA FO.

All alternatives call for closing roads to protect fish and wildlife habitat, which would reduce this primary vector for spread of invasive species. Alternatives C and D call for reductions in road densities, which would have even greater effect.

Impacts from Wildland Fire Management

Wildland fire, suppression activities, and fuels treatment actions have the potential to spread weed seeds or create conditions that favor weeds by creating soil disturbances. Therefore, minimizing the amount of burned areas by controlling fire starts within one operational period (as called for under Alternatives A, B, and D) would minimize the amount of area potentially susceptible to weed infestation. However, fully suppressing all wildland fire starts in one operational period may require an aggressive management response, resulting in greater soil disturbance than other less aggressive responses, which in turn would increase the potential for the spread of any weeds that are already in the area or are able to establish post-fire. Stabilizing and repairing burned areas would include revegetation with native species or approved noninvasive species, reducing chances of weed infestation. Under Alternatives B, C, and D, the BLM would consider effects of wildland fire on invasive weed species in developing specific wildland fire use plans to provide resource benefits on approximately 52,319 acres.

Impacts from Visual Resources Management

Visual resources management can indirectly impact the spread of invasive species through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no additional impact. Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving disturbance to vegetation and soil, in these areas. These constraints would reduce the potential for the spread of invasive species, quantitatively corresponding to the total area classified as VRM II. Total area classified as VRM II varies among the alternatives: 14,312 acres for

Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations).

Impacts from Forestry and Woodland Products Management

The probable sale quantities and potential impacts from harvesting forest products are directly related to, and the same as those described above under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Livestock Grazing Management

Livestock can contribute to the spread of noxious and invasive weeds. Weed seeds can attach to animals or be ingested. They can then be transported to other areas, where weed seeds are spread by the animal physically removing the seed or fruit or through the deposition of fecal matter. Areas where animals concentrate and disturb the soil are particularly vulnerable to infestations of noxious and invasive weeds. The Idaho Rangeland Health Standards and Guidelines, which would be followed under all alternatives, contain standards that allow for control of invasive weeds. These standards stipulate that a measure of proper range health is that invasive weed species are not increasing and that grazing measures must be designed to assist in containing weed species. The impact of livestock grazing would be proportional to the area allocated for this use. Alternatives A and B allocate 4,004 acres, while Alternatives C and D allocate only 1,218 acres for livestock grazing.

Impacts from Minerals Management

Quarries and mines associated with locatable and saleable minerals typically disturb vegetation and soils during operation of the project. Some areas already have weed infestations, and these areas could also be a source of weed seed that could spread to other adjacent areas via roads. Disturbances result in increased weed potential, including import of weed seeds and soil disturbance. Reclamation is necessary for reestablishing plants on these disturbed areas. Currently there are 5,376 acres withdrawn from mining (under Alternatives A, and B). Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more opportunity for the spread of invasive species than Alternative C.

Impacts from Recreation Management

Recreation can create disturbances as well as introduce and spread noxious and invasive weeds seeds from vehicles, shoes, clothing, recreational trail stock, and recreational equipment. Off-road vehicles are a prime source of both soil disturbance and transport of weed seed into previously areas not previously infested. Generally, impacts are less in SRMAs than in the ERMA. Thus the potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce invasive species and noxious weed impacts more than any other alternative.

Impacts from Renewable Energy Management

Impacts from biomass harvesting are the same as those described under Impacts from Vegetation – Forests and Woodlands Management. For wind energy development, associated road construction and use of heavy machinery to install and maintain wind turbines and power lines would cause vegetation and soil disturbance, which would result in opportunities for the spread of invasive species. BMPs would be implemented under all alternatives which would reduce the potential for these impacts. The action alternatives (Alternatives B, C, and D) contain management direction for renewable energy development that current management does not. This direction would help to reduce the potential for spread of invasive species.

4. Environmental Consequences

Impacts from Transportation and Travel Management

OHV use would result in impacts on vegetation, such as loss of vegetation cover and density and composition changes. OHV users would introduce and spread noxious and invasive weed seeds from their vehicles, shoes, clothing, and recreational equipment. As OHV use increases, people from outside the area would bring in noxious and invasive weeds, including new invasive species. OHV activities in undisturbed and remote areas have the potential to distribute weed seeds into weed-free areas. In areas open to off-road motorized vehicle use, impacts can be widespread. In areas where motorized use is limited to designated roads, impacts would be concentrated, affording more effective management of weed infestations. No impacts would occur in areas closed to motorized vehicles. No notable impacts would occur from snowmobile use.

Alternative A: Currently there are 63,041 acres that have no travel designation. By default, these areas are open to cross-country motorized travel. As described above, off-road use in these areas could increase potential for spread of invasive species. Impacts would occur in the vicinity of the 27 miles of roads and trails open to motorized travel within limited areas. Only 162 acres are currently closed to motorized travel, where no impacts would occur.

Alternative B: There is no area open to cross-county motorized travel, thus impacts on soils associated with open designation would not occur. Impacts would occur in the vicinity of the 282 miles of roads and trails open to motorized travel within the limited areas. While this is an increase in designated roads and trails over current management, most of the additional road designations fall within areas that are currently open to off-road travel. This alternative retains the closed area designations from Alternative A.

Alternative C: Similar to Alternative B, there is no open area and impacts associated with open designation would not occur. Impacts would occur in the vicinity of the 175 miles of roads and trails open to motorized travel within limited areas. Approximately 311 acres are closed to motorized travel under this alternative.

Alternative D: This alternative also has no open area and impacts would occur in the vicinity of the 175 miles of roads and trails open to motorized travel within limited areas. Approximately 631 acres are closed to motorized travel.

Impacts from Lands and Realty Management

Certain activities, such as constructing utility lines or transmission facilities may lead to a high level of soil and vegetative disturbance, increasing the potential for weed spread. Impacts may occur from import of weed seeds on construction vehicles and creation of soil disturbances that favor weeds. Holders of use authorizations would be required to follow standard guidelines for natural resources objectives, and are subject to a weeds fee that provides funds for BLM weed control actions. Rights-of-way for commercial log hauling across BLM lands have a significant impact on weed spread on roads. They are also subject to the BLM weeds fees and account for the majority of the weeds fees collected in the CdA FO.

Alternative A: Current management does not specify any specific restrictions on ROW authorizations or land use permits. Thus related spread of invasive species could occur anywhere in the planning area.

Alternative B: This alternative would involve 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. ROWs and use permits would be concentrated in the remaining 51,548 acres, which would allow for more effective treatment of resulting weed infestations.

Alternative C: This alternative would involve 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the effectiveness of weed treatments.

Alternative D: This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designations Management

Limitations on activities (vegetation treatments, motorized vehicle use, etc.) which would be allowed within ACECs/RNAs, and WSR eligible/suitable corridors, would reduce the potential for the spread of invasive species.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where most activities that could result in invasive species or noxious weed impacts are already not allowed. Thus, designation of the Lund Creek RNA would not affect invasive species. Indefinite protective management of five stream segments, totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation would reduce potential for spread of invasive species. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer). Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments would have little effect on invasive species.

Alternative B: The impacts from designation of Hideaway Islands and Lund Creek as ACEC/RNAs are the same as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention.

Alternative C: This alternative would designate 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded there. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, with the minor effect on invasive species described under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight reduction in the potential for the spread of invasive species. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments identified.

4.2.7.3 Cumulative Effects

Weeds have become one of the largest management problems on public and private lands throughout the western United States. Weed problems in the CdA FO exemplify the problems that weeds pose on a mass scale throughout the region. Weeds can occur virtually anywhere, but are most commonly found in places that have been disturbed by vegetation treatments, utility lines, timber harvest, mining, grazing, roads, OHV use, or fire suppression and treatment actions.

4. Environmental Consequences

In addition to the current BLM weed management program, forest management plans prepared by the USFS address issues related to weeds, including their spread and establishment.

Weeds are established throughout the cumulative assessment area, and are likely to increase. Increases in OHV use will continue, although restrictions may be placed on such activities in some areas. Effects from this use will include increased soil and vegetation disturbance, as well as increased introduction of new species from one place to another as OHV users travel longer distances to access favorite OHV use areas.

Disturbances brought on by mining, timber extraction, and grazing are similar to each other, although may occur over different scales. This will allow for introduction of weeds into new areas, requiring an increased management response on the part of BLM and other land management agencies. At present management levels, weeds will continue to increase.

Forest treatments in WUI areas throughout the cumulative assessment area may increase as people build homes and communities farther into areas that are currently undeveloped. To the extent that these treatments target weed populations, these populations may be controlled. However, forest treatments that involve use of wildland or prescribed fire or mechanical treatments would require an increased prevention effort and management response for weed control in the aftermath of such treatments. Education of users of federal lands is essential to reducing the introduction and spread of weeds. Cooperative weed management association (CWMA) efforts would also be essential to achieving success in weed control.

Under all alternatives, management measures are proposed to identify and minimize weed potential resulting from authorized actions and events and activities. These actions are similar across the spectrum of alternatives, and commit BLM to continue working with partners from local, state, and federal agencies to control weeds on a broad scale. Measures such as requiring vehicle washes will diminish effects of weed outbreaks in areas outside of the CdA FO by minimizing the potential for seed introduction. However, BLM weed management efforts may be affected if management of adjacent lands is not successful in containing weeds.

4.2.8 Fish and Wildlife

4.2.8.1 Fish

4.2.8.1.1 Methods of Analysis

Objectives and management actions could result in impacts on fisheries resources if they directly or indirectly change the quantity, quality, or availability of aquatic habitat, or cause a change to fish populations.

4.2.8.1.2 Impacts

Impacts from Fish and Wildlife Management

All alternatives contain protective measures for fish and aquatic habitat, with a focus on native fish species. Under Alternative A, the INFISH guidance would be followed, whereas under Alternatives B, C, and D a new strategy based on INFISH, called CNFISH, has been tailored to the BLM's land and management capabilities. The goals and objectives of INFISH and CNFISH are the same; the implementation actions to achieve these goals are similar, with only slight differences.

Alternative A: Under Alternative A, the INFISH guidance would be followed. INFISH has criteria for identifying Riparian Habitat Conservation Areas (RHCAs) and provides specific measures for management. INFISH also provides guidance for identifying priority watersheds but identifies no specific watersheds. Restoration and conservation in riparian areas would increase or maintain the quality of associated aquatic habitats and would help increase or maintain fish populations. Also under this alternative, fish passages would be improved at all road crossings, unless installation of a barrier would be beneficial to native fish.

Deer habitat protection measures under Alternative A may include vegetation treatments. Although measures to protect riparian areas should also protect aquatic habitats, there are potential impacts on aquatic habitats and fisheries associated with vegetation treatments. These impacts are described under the Impacts from Vegetation – Forests and Woodlands section.

Alternatives B, C, and D: Under these alternatives, CNFISH would be implemented. CNFISH has criteria for identifying RCAs and provides specific measures for management. Additionally, four conservation and eight restoration watersheds, with priority levels ranging from moderate to high, are identified under this alternative. Implementing CNFISH and identifying priority watersheds under Alternatives B, C, and D could result in slightly more riparian habitat protection than under Alternative A since it is possible that slightly fewer restoration and conservation actions would be implemented using Alternative A's INFISH guidance. Restoring and conserving riparian areas would increase or maintain the quality of associated aquatic habitats and would help increase or maintain fish populations.

Fish passage would be provided at new, replaced, and reconstructed road crossings, unless installation of a migration barrier would be beneficial to native fish. Fewer road crossings would be improved for fish passage compared with Alternative A, where fish passage would be provided at all road crossings.

Fish and wildlife management measures to restore and enhance aquatic habitat for sport fish would be implemented under Alternatives B and D, but not C. These measures would increase the quality and quantity of sport fish habitat. In addition, fishing pressure in these areas could increase, resulting in elevated riparian impacts from foot traffic and river access, compared to Alternative A. Growing nonnative sport fish populations could be detrimental to native fish due to competition or predation.

4. Environmental Consequences

Deer habitat protection measures under Alternatives B and D emphasize the use of vegetation treatments. Although measures to protect riparian areas should also protect aquatic habitats, there are potential impacts on aquatic habitats and fisheries associated with vegetation treatments. These impacts are described under the Impacts from Vegetation – Forests and Woodlands section. Deer habitat protection measures under Alternative C do not emphasize vegetation treatments, and related impacts would not occur.

Impacts from Soils Management

Under all alternatives, BMPs and INFISH RHCA/CNFISH RCA buffers would minimize soil erosion and protect riparian habitats. This would indirectly protect aquatic habitats and fish by increasing proper functioning condition of riparian habitats, including retention of large woody debris characteristic of natural conditions, retention of thermal water quality, and maintenance of surface, channel and bank characteristics.

Impacts from Water Resources

Under all alternatives, aquatic habitat and fisheries would be enhanced and protected by management measures designed to improve or maintain water quality. These include watershed maintenance and restoration. The potential for improvement under the action alternatives (Alternatives B, C, and D) could be slightly more than under Alternative A, because they contain more specific direction and identified actions to restore and enhance watersheds.

Impacts from Vegetation – Forests and Woodlands Management

The potential for degradation of fish habitat from forest vegetation treatments would be greatly reduced by implementation of INFISH (Alternative A) and CNFISH (Alternatives B, C, and D). Because CNFISH more clearly defines implementation measures than INFISH, the action alternatives (Alternatives B, C, and D) would increase protection and restoration activities within RCAs over Alternative A. The actions associated with forest vegetation treatments could impact special status fish populations and aquatic habitats as follows:

- *Increased sedimentation on fish-bearing streams.* The relative contribution of sediment associated with forestry practices appears to be moderate from clear-cutting (i.e., higher than from selective cutting or patch-cutting), moderately high from skid trails, and moderate from site preparation. By far, sediment generation is greatest from logging roads, particularly if built near streams (Waters 1995). Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from forest vegetation treatments could occur even if the treatments take place outside the buffer zones.
- *Altered stream flow regimes.* Water yield increase resulting from vegetation removal could result in scouring of stream channel bottoms, decreasing fish habitat and food sources (BLM 1982a). The potential for this to occur is low, considering the riparian buffer zones, but localized scouring could occur.
- *Changes in water temperatures.* Increases in water temperature can occur in areas where streamside vegetation is removed, increasing the amount of sunlight reaching the water. The buffer zones identified in INFISH/CNFISH would likely prevent vegetation treatments from occurring in these areas. If treatments were to occur in riparian areas, increased water temperatures could reduce suitable habitat for cold water fish species. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates decreases.

The magnitude of impacts would correspond with the number of acres treated. Alternative A would treat 7,000 acres. Vegetation treatments under Alternative B would increase 37 percent over Alternative A;

Alternative C would reduce treatments by 83 percent, and Alternative D would increase treatments by 17 percent.

In addition, Alternatives C and D would specifically conserve and restore aspen, birch, and cottonwood stands. This would maintain or improve the functional condition of riparian areas, and thus aquatic habitat, because these tree species are often associated with riparian zones.

Impacts from Vegetation – Riparian and Wetlands Management

All alternatives set objectives for achieving PFC within riparian and wetland areas. Striving to achieve PFC would maintain and/or improve riparian habitat and its associated function, including vegetative density, bank stability goals, and thermal regulation, for fish populations. Alternatives A, C, and D set a PFC objective of 75 percent, while the objective under Alternative B is 50 percent. Thus Alternative B would be least effective at protecting aquatic habitat. Alternatives B, C, and D contain actions, not included under Alternative A, for active maintenance and improvement measures to help reach PFC, which would improve the potential for success. All alternatives also have an objective for inventory and assessment of riparian and wetland areas. Inventory data could be used to identify and prioritize degraded aquatic habitat for restoration.

Impacts from Vegetation – Invasive Species and Noxious Weeds Management

Under all alternatives, herbicide treatments of invasive species have the potential to adversely affect water quality. Use of the product according to the label and monitoring of applications would minimize the potential for these impacts. Depending upon the species, large noxious weed infestations tend to provide inferior riparian habitat compared to populations of native riparian species. Species such as spotted knapweed have been shown to increase soil erosion by suppressing surrounding vegetation, which could lead to degraded water quality and aquatic habitat. Noxious weed control measures would reduce the potential for this impact to occur. The level of weed control is similar for all four alternatives, and slightly higher under Alternative C because it includes a specific requirement for vehicle wash stations.

Impacts from Special Status Species Management

The impacts from implementing INFISH and CNFISH guidance are discussed above under Impacts from Fish and Wildlife Management. Added emphasis on protection of bull trout and white sturgeon habitat, contained under Alternatives B, C, and D, would help protect aquatic habitat for all fish species that occur in these water bodies. Alternative C adds an action recommending withdrawal of lands within 300 feet of special status fish species streambeds from locatable minerals, which would increase protection of this aquatic habitat from the impacts of mineral development (see Impacts from Minerals Management below).

Also, some protection of aquatic habitats would be afforded as a result of bald eagle protection measures found in the action alternatives (Alternatives B, C, and D). Buffers surrounding nest sites and protection of snag habitats could reduce potential impacts on riparian areas from general human uses.

Management measures under the action alternatives for the recovery of the yellow-billed cuckoo, a riparian-dependent species, would also help riparian habitats. Healthy riparian habitats provide water quality, shade, and invertebrate food sources for fish populations.

Impacts from Wildland Fire Management

Fire suppression may involve the use of retardant and heavy equipment. When retardant enters water bodies, it can degrade aquatic habitat. Heavy equipment can disturb soil which can lead to increased sediment in streams. INFISH and CNFISH contain standards and guidelines for fire and fuels management, which would reduce the potential for these impacts. Also, under the action alternatives (Alternatives B, C, and D) riparian

4. Environmental Consequences

habitat is a specific criterion for consideration when establishing fire management priorities. Under Alternative C, actions to identify areas where fuels treatments will improve or protect noncommodity natural resources (such as aquatic habitat) are specific to this alternative and would offer the greatest potential for improved habitat conditions of any of the alternatives.

The Action Alternatives also identify 52,319 acres where wildland fire use would be considered. The short-term effect of fire use would be removal of riparian vegetation and degradation of aquatic habitat. However, the return of fire to its natural role in the ecosystem would lead to long-term enhancement of riparian vegetation and aquatic habitat.

Impacts from Visual Resources Management

Visual resources management can indirectly impact riparian and wetland vegetation and aquatic habitat through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. While 12-15 percent (varying slightly by alternative) of this VRM II area is within RHCAs/RCAs where riparian vegetation is already protected, the constraints placed on the remaining VRM II areas would reduce the potential for actions to degrade aquatic habitat, corresponding in effect to the total area classified.

Impacts from Forestry and Woodland Products Management

Potential impacts from forestry and woodland products are the same as those described under the Impacts from Vegetation – Forests and Woodlands section for vegetation treatments.

Impacts from Livestock Grazing Management

Livestock can impact riparian vegetation and aquatic habitat around watering locations by trampling and grazing plants and by soil compaction, which reduces riparian species cover and diversity, and degrades functioning condition. Under Alternative A, approximately 4,004 acres of land would be available for livestock grazing. Only 37 of these acres are within riparian zones. Alternatives C and D allocate only 1,218 acres for livestock grazing, with only 11 acres in riparian zones. Thus impacts on aquatic habitat from livestock grazing would be negligible under any alternative. Any impacts that might occur would be reduced by implementation of Idaho Standards for Rangeland Health and grazing guidelines from INFISH/CNFISH.

Impacts from Minerals Management

Implementing INFISH and CNFISH would protect fish habitat from degradation resulting from mining. The actions associated with mining could impact special status fish populations and aquatic habitats as follows:

- Increased sedimentation on fish-bearing streams. Excess sediment generation can be the direct result of surface disturbances for mineral extraction, drilling, and facilities construction and also for road construction, maintenance, and use. Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from mining could occur even if the mining activities are outside the buffer zones.

- Introducing hazardous materials to fish-bearing rivers, streams, and lakes. Hazardous materials from the mining activities themselves and from equipment use and maintenance could be released into fish-bearing water bodies. Associated with locatable minerals extraction are mine tailings, which can introduce heavy metals. Similarly, the extraction of fluid materials can result in oil or other fluid releases, which could degrade water quality. An example of this is the releases associated with well-flow testing for geothermal power development. Spills can also occur from equipment that uses hazardous fluids such as gasoline and oil. The impact on fish populations depends upon the type of hazardous material released and the quantity of the release. If severe enough, mortalities can occur and habitat can become unsuitable for aquatic life.
- Altered stream flow regimes. Water yield increase resulting from vegetation removal and alteration of natural drainage could result in scouring of stream channel bottoms and decreasing fish habitat and food sources. The potential for this to occur is relatively low, considering the INFISH/CNFISH riparian buffer zones, but localized scouring could occur.
- Changes in water temperatures. Increases in water temperature can occur in areas where streamside vegetation is removed, increasing the amount of sunlight reaching the water. The buffer zones identified in INFISH/CNFISH would likely prevent mining from occurring in these areas. If mining were to occur in riparian areas, increased water temperatures could reduce suitable habitat for cold water fish species. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates is decreased.

Currently (under Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on aquatic habitat than Alternative C.

Impacts from Recreation Management

Generally, removal of vegetation and other damage to riparian habitat from recreational use would be less in SRMAs than in the ERMA. Thus the potential for impacts would correspond inversely to the number of acres of riparian habitat within SRMAs. Under Alternative A, SRMAs cover 871 acres of riparian habitat. Riparian habitat within SRMAs under Alternative B would total 6,851 acres, with 5,424 acres under Alternative C, and 7,519 under Alternative D.

Impacts from Renewable Energy Management

Impacts on fisheries and aquatic habitat from extraction of biomass fuels would be the same as those identified from vegetation treatments under Impacts from Vegetation-Forests and Woodlands. Road construction and use, or power line installation associated with wind energy development, could result in soil erosion or removal of riparian vegetation, which would degrade functioning conditions in affected riparian zones. Implementation of INFISH/CNFISH restrictions and BMPs under all alternatives would minimize these effects.

Impacts from Transportation and Travel Management

Use of roads and trails (except for snowmobile use) can result in increased sedimentation to fish-bearing streams, rivers, and lakes. Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish.

4. Environmental Consequences

Table 4.2.8-1 summarizes the transportation and travel management designations for the CdA FO for each alternative. Alternative A is the only alternative that would continue to have open travel areas. The greatest potential for increased sedimentation occurs in areas open to off-road motorized travel where new roads and trails are being created and overland riding can cause erosion. Limited travel areas would be less likely to cause increased sedimentation than open travel areas. Closed travel areas would protect fish-bearing streams from the effects of road and trail use. Consequently, Alternative A is likely to have the greatest amount of sedimentation impacts of the four alternatives. Impacts affect aquatic habitat more when they occur within riparian vegetation. See the section on Impacts from Travel Management on Riparian Vegetation for more specific information.

Table 4.2.8-1 Transportation and Travel Management Statistics by Alternative				
Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,549 ac	96,139ac
Road open to all vehicles	13.2 mi	169 mi	53 mi	107 mi
Road with seasonal/class restriction	0 mi	62 mi	65 mi	18 mi
Trail with class restriction	14 mi	51 mi	4 mi	50 mi

Impacts from Lands and Realty Management

ROW authorizations and use permits are generally for activities such as road construction or facilities development. Construction, road use, and heavy equipment can cause soil erosion or remove riparian vegetation resulting in degradation to aquatic habitat. Under current management there are no restrictions on ROW authorizations or land use permits. Thus related impacts on aquatic habit could occur anywhere in the planning area, within the limits of INFISH restrictions. The action alternatives (Alternatives B, C, and D) each identify ROW exclusion areas where no ROW authorizations or land use permits would be allowed, and ROW avoidance areas where authorizations would only be allowed when there was no other practical location. All RCAs are identified as avoidance areas under the actions alternatives. In addition, between 3,623 and 3,732 acres of RHCA/RCA fall within ROW exclusion areas. Also, when actions are authorized within RHCAs or RCA, CNFISH restrictions would apply. Thus, potential impacts from lands and realty authorization on aquatic habitat would be greatly reduced as a result of the actions within this section of the action alternatives.

Impacts from Special Designations Management

Special designations, such as ACECs, could help to protect riparian and wetland vegetation, thus protecting aquatic habitat. Localized protective management of stream segments found eligible or suitable for Wild and Scenic River designation could provide similar protection.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Aquatic habitat would be protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on aquatic habitat are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on aquatic habitat. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and Scenic River designation, would include protection of riparian vegetation. However, eligible segments include 14

miles of the Kootenai River, along which BLM has only scattered ownership, and very little ability to influence aquatic habitat. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would actually be little added protection.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect riparian and wetland vegetation as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of riparian vegetation.

Alternative C: This alternative would protect aquatic habitat through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded in these areas. The portions of the Little North Fork Clearwater Headwaters ACEC that are outside of the Grandmother Mountain WSA would be managed to protect habitat for fish, as would all of Wolf Lodge Bay ACEC and the Kootenai River Front ACEC. Gamlin Lake and Killarney Lake ACECs would also emphasize protection of riparian and wetland habitat, and therefore protect aquatic habitat. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of the riparian vegetation that they contain. Little North Fork Clearwater Headwaters, Wolf Lodge Bay, Gamlin Lake, and Killarney Lake are not identified as ACECs under this alternative. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

4.2.8.1.3 Cumulative Impacts

Fish populations are not restricted by land ownership. Many resident populations migrate up and downstream depending on their lifecycle using aquatic habitats independent of land ownership. Aquatic habitat management outside BLM administered lands is often critical for the health of fish populations within BLM managed lands. Additionally, water quality on BLM land is often inherited from sources upstream or upslope outside of BLM managed lands. Land management activities both outside and within BLM-managed lands are important for fish populations including special status fish. Cumulative impacts on fish and special status fish would be those impacts where activities outside of BLM combined with actions on BLM-managed lands would combine to affect fisheries. Many of the cumulative actions and events discussed regarding water quality under Section 4.2.3, *Water Resources* would also have cumulative impacts on fish habitat and populations.

Timber management activities on BLM-managed land have occurred within the planning area for more than half a century. Timber harvest has been occurring on adjacent lands as well and will continue into the future. Impacts from the earliest activities likely had the most impact because effects on streams and fish habitat were often not taken into consideration. Even if fisheries habitat was considered, the impacts of roads, vegetation removal, and other aspects of timber harvest were not fully understood. In the 1970s, guidelines on forest practices began to be used, including streamside buffers, and these guidelines have continued to evolve to the present (Chamberlin et al. 1991). Current timber management activities are implemented in a manner that minimizes impacts on fish and aquatic habitats, though rules vary among land ownerships with some being more protective than others. In general, the oldest of the past activities probably would have had the greatest

4. Environmental Consequences

impact on fish and aquatic habitat, but the streams have also had a relatively long time to recover from these early impacts.

Alternative A: Fisheries and aquatic habitat conservation measures implemented on lands adjacent to or along the same fish bearing waterways as BLM could increase the quality of aquatic habitats and protect fish populations. These measures include the requirements of the ESA, strategies of ICBEMP and INFISH.

Potential degradation of water quality, riparian habitats, and aquatic habitats could occur from timber, mining, road construction, OHV use and grazing activities outside BLM administered lands. These potential impacts combined with the potential impacts from these activities on BLM administered lands could result in increased impacts on fish populations. Although there are several conservation measures to be implemented along with these resource uses, the impacts described in Section 4.2.8.1.2 could occur. The largest degradations to aquatic habitats are most likely to occur from activities on private lands which are not subject to the same environmental reviews as federal and state managed lands.

Alternative B: Cumulative impacts under Alternative B would be similar to those presented under Alternative A except the CNFISH conservation measures would be implemented in lieu of INFISH. Potential degradation of aquatic habitats would increase under Alternative B which would increase timber harvest compared with the other alternatives.

Alternative C: Cumulative impacts under Alternative C would be similar to those presented under Alternative B. Potential degradation of aquatic habitats from other resource uses would be reduced compared with Alternative B because less timber would be harvested. Potential impacts from these activities are described in the general discussion of environmental impacts in this section.

Alternative D: Cumulative impacts under Alternative D would be similar to those presented under Alternative B. Timber harvest activities would be reduced compared to Alternative B but would be greater than Alternatives A and C.

4.2.8.2 Terrestrial Wildlife

4.2.8.2.1 Methods of Analysis

This section presents potential impacts on terrestrial wildlife including migratory birds from other management actions. Objectives and management actions could result in impacts on these species if they directly or indirectly change the quantity, quality, or availability of habitat, or cause a change to species populations. The following is a list of habitat characteristics used in this analysis to identify potential for change to these indicators:

- Seral stage of forest vegetation;
- Quantity of trees with cavity nesting potential;
- Size of trees;
- Complexity of canopy structure;
- Quantity of large woody debris;
- Quantity of invasive species;
- Measures of habitat fragmentation;

- Tree cover along wildlife travel corridors such as streams and ridge tops;
- Proper functioning condition of riparian and wetland habitats;
- Water quality;
- Population size;
- Species density; and
- Species diversity.

4.2.8.2.2 Impacts

Impacts from Fish and Wildlife Management

Both INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) would protect and improve riparian vegetation and habitat, as described under the Vegetation-Riparian and Wetlands Management and the Fish segment of this Fish and Wildlife section. This would improve the quality of habitat for riparian-dependent wildlife and could lead to an increase in density and diversity of these species. Actions proposed under Alternatives B and D to restore and enhance aquatic habitat for sport fish could further improve habitat for riparian-dependent wildlife.

Under all alternatives, seasonally closing roads in crucial and important winter range for deer and elk would reduce potential impacts on these big game herds by reducing sources of disturbance during periods when these animals need to conserve energy to survive. This effect could apply to several species of nongame wildlife that are sensitive to winter disturbances. These and other actions to protect and improve deer and elk habitat would likely maintain or slightly improve habitats for these big game species and thus at least generally maintain their approximate mean population parameters. Under Alternatives B and D, emphasis on actively treating vegetation to improve deer and elk winter range would likely result in habitat changes sooner than under the other alternatives. Effectiveness on deer and elk populations would vary by type of treatment. These treatments could increase the mean sizes of the deer and elk populations on public lands and nearby private lands. A multitude of other factors that affect the size of these populations, such as weather trends, disease, and predation, would still result in fluctuations below and above current population levels. Effects on other wildlife from these vegetation treatments would vary dramatically by guild and habitat preferences, as well as by the type of treatment. Actions under Alternative B would provide for more treatments and more effects on populations than under Alternative D.

Closing and partially obliterating roads would reduce numerous direct, indirect, cumulative, and additive impacts on many species of forest wildlife that are disturbed by vehicular traffic and habitats that are fragmented by roads. The criteria for closing roads under Alternative A make these actions less effective for wildlife management purposes than under the other alternatives.

Snag management actions would leave more snags for cavity-dependent wildlife, including migratory birds. Related actions under Alternative A would result in more snags than Alternative B but fewer than under Alternatives C or D. Under Alternatives D and C, actions to retain large trees for snag recruitment, retaining and promoting late-seral forests through vegetation treatments, and emphasizing uneven-aged silvicultural management techniques would result in a greater area of appropriate habitats for late-seral dependent wildlife species and less area for species dependent on younger forests.

4. Environmental Consequences

Buffer restrictions around raptor nests would protect raptors and their habitats. A larger buffer would generally be more effective. Alternatives A and C would implement a 100-yard buffer. Alternative B would implement only a 50-yard buffer, and Alternative D would implement a 100-yard buffer outside, and 50 yards within, urban and rural areas.

Under Alternatives A, B, and D, planning for small clear-cuts and planting forage such as grasses or white Dutch clover would improve grouse habitat, possibly resulting in larger populations and greater hunting opportunities. This clover is not native to Idaho forest habitats and would decrease the habitat quality for most native species while providing increased forage for a few herbivores. Small clear-cuts could improve habitat conditions and increase populations of species that select open habitats and edges and could have the opposite effect on species requiring forest interior. Alternative C calls for no such treatments, and Alternative D calls for planting native grasses and forbs.

Enhancing habitat for furbearers under the action alternatives (Alternatives B, C, and D) via implementing CNFISH and maintaining and enhancing old growth forest stands would at least maintain habitat and populations for furbearers, as well as for other old growth dependent wildlife species. These alternatives also call for implementing habitat management plans (HMPs) specific to waterfowl, which could enhance habitat and attract waterfowl to these areas, possibly enhancing waterfowl production locally and increasing hunting opportunities. These HMPs could increase or decrease the quantity and quality of habitat for other wetland wildlife, such as migratory birds, depending on the site-specific prescription of each HMP.

Alternative C prohibits vegetation treatments that could result in the take of migratory birds and would eliminate many vegetation treatment options between May 15 and July 15; this would reduce the take of migratory birds and would reduce mortality and disturbance of other forest species' activities, such as deer fawning and elk calving. Alternative D calls for avoiding and minimizing (not prohibiting) vegetation treatments that could result in a take, to the extent practicable. This would reduce the take of migratory birds and reduce mortality and disturbance of other forest species' activities, such as deer fawning and elk calving, where implemented.

Alternatives C and D call for providing access for bats when closing abandoned mines that currently provide or could provide bat habitat. This would maintain or increase the potential for bats to use these mines and thus could maintain or increase bat populations.

Impacts from Soils Management

Under all alternatives, BMPs and riparian buffers would indirectly improve riparian-dependent wildlife habitat by increasing proper functioning condition of riparian habitats.

Impacts from Water Resources Management

Under all alternatives, actions designed to maintain and improve water quality and physical stream characteristics via assessment, BMPs, coordination, and implementation of INFISH/CNFISH could indirectly improve habitat for riparian-dependent and fish-eating wildlife by improving instream structure and vegetation to desired conditions along streams. The potential for improvement could be slightly less under current management than under the other alternatives because of fewer specific actions to restore and enhance watersheds.

Impacts from Vegetation – Forests and Woodlands Management

All types of treatments would involve short-term impacts such as habitat fragmentation from roads and skid trails and would temporarily prevent habitat use by some wildlife due to human activities while the

treatment(s) are in progress. The magnitude of all treatment-related impacts would correspond to the number of acres treated. Alternative A treats 7,000 acres. When compared to Alternative A, Alternative B treats 37 percent more acres; Alternative C treats 83 percent fewer acres; and Alternative D treats 17 percent more acres.

Alternative A: Vegetation treatments to return specific areas to historic species composition would alter wildlife habitats immediately after treatments and possibly for decades depending on how much structure was retained as part of the stand treatment. Habitat for some species would be improved, especially those that select more early seral or open seral forest habitats, and habitat for other species would be degraded, especially for those that prefer denser and structurally diverse habitats and closed seral habitats. Vegetation treatments that reduce structure while returning the stand to its historic species composition could impact species that require stands with complex structure for decades. Effects from vegetation treatments would be highly dependent on: (1) species; (2) habitat conditions before and after treatments; (3) type of treatment; (4) details of how each treatment is carried out; (5) adjacent habitat types; and (6) long-term management of each area after treatment.

Alternative C: The effects are the same as Alternative A, except that most vegetation treatments would be applied to areas as a result of disturbances, which most likely will come from wildland fires or insect infestations that have substantially removed forest vegetation and that require treatments to encourage restoration of native tree species matching the cover type of the affected area. Other vegetation treatments would concentrate on restoring historic species composition and would not necessarily consider structure similar to Alternative A. Alternative C also specifically calls for conservation and restoration of aspen, birch, and cottonwood stands, which is not part of Alternatives A and B. This would enhance habitat for species who favor these tree components.

Alternative B and D: The need to return an area to its historic species composition would be tempered by also bringing each cover type closer to its historic structure mix (early, mid, and late seral). While treatments would favor retention of species that would tend to bring an area closer to historic species composition, it may also require retaining a species composition that does not meet the historic composition for a longer time in order to meet structure needs of an area. Treatments designed for structure changes toward a later seral stage or toward a more complex structure would create more of these habitats. Alternative D also specifically calls for conservation and restoration of aspen, birch, and cottonwood stands, which is not part of Alternatives A and B. This would enhance habitat for species who favor these tree components.

Impacts from Vegetation – Riparian and Wetlands Management

Actions to maintain and improve functioning conditions of riparian and wetland areas would also improve or maintain riparian wildlife habitat. Alternatives A, C, and D have an objective to achieve PFC for 75 percent of the riparian and wetland areas. Alternative B has a PFC objective of only 50 percent. Unlike current management, the action objectives (Alternatives B, C, and D) specify actions for maintaining and improving riparian and wetland areas. Thus the specified objective would be more likely met under the action alternatives.

Impacts from Vegetation – Nonforested Management

Current management calls for meeting the Idaho Rangeland Health Standards, which would protect nonforested vegetation habitat. The action alternatives (Alternatives B, C, and D) have more specific actions to provide more protection. Alternatives C and D place more emphasis on nonforested vegetation by requiring active prevention of off-road motorized vehicle use and restoration of native plant communities.

4. Environmental Consequences

Impacts from Vegetation – Invasive Species and Noxious Weeds Management

Under all alternatives, actions to prevent and control invasive and noxious weeds using integrated weed management techniques could reduce the area and severity of damage to wildlife habitats by reducing the quantity of invasive species and thus decreasing the competition, allowing native species vital to wildlife to increase (or at least slow down the rate of decrease).

Impacts from Special Status Species Management

Under all alternatives, compliance with the ESA and BLM policy would indirectly conserve wildlife species that use habitats similar to federally listed plants and animals. Implementing recovery activities for wolverine could maintain or increase the area of suitable habitat for wildlife species that use broad-elevation old forest habitats, such as varied thrush. Actions designed to ensure that rare plant populations are stable or continue to improve could indirectly have similar effects on wildlife that use the habitat types occupied by special status plants.

Under the action alternatives (Alternatives B, C, and D) many actions designed for special status fish species, such as implementing CNFISH, would also increase and improve the habitat of riparian-dependent wildlife species, such as American dipper and yellow warbler. Implementing recovery activities for bald eagle could maintain or increase the area of suitable habitat for wildlife species that also use riparian habitats, such as common merganser.

Action Alternatives (Alternatives B, C, and D): Implementing recovery activities for Canada lynx could maintain or increase the area of suitable habitat for other wildlife species such as snowshoe hare that also use a mosaic of forest habitats. Implementing recovery activities for woodland caribou could maintain or increase the area of suitable habitat for wildlife species that also use broad-elevation old forest source habitats, such as pileated woodpecker.

Implementing actions to protect and recover gray wolf could result in slight improvements in deer and ungulate habitat conditions. Potential increases in wolf populations could alter the composition of deer and elk herds by culling weak, diseased, and old individuals, which could result in slightly smaller but healthier ungulate populations.

Implementing recovery activities for fisher and wolverine could maintain or increase the area of suitable habitat for wildlife species that use broad-elevation old forest habitats, such as varied thrush.

Actions designed to ensure that rare plant populations are stable or continue to improve could indirectly have similar effects on wildlife that use the habitat types occupied by special status plant species.

Impacts from Wildland Fire Management

Similar to forested vegetation actions, wildland fire management actions would affect each wildlife species differently based on their habitat needs. Wildlife species native to northern Idaho evolved over a long period of time in the presence of natural fires in many habitat types. In general and over the long term, historic fire regimes could restore habitats to historic conditions. Because existing conditions differ from historic conditions due to fire suppression, timber harvest, and other activities, the effect of forest fire on wildlife may not be consistent with what the species evolved. Quantity and quality of wildlife habitat that is similar to historic conditions may be achieved as a result of some fires. Fuel treatments would have effects similar to forested vegetation treatments.

Actions under Alternatives A and B place more emphasis on protecting commercially valuable resources than on resources such as wildlife. Thus, potential improvements of wildlife habitat from wildland fire would be less and potential degradations of specific habitat features could be greater than under Alternatives C or D. Under Alternative C wildland fire management actions would have more emphasis on noncommodity resources. Therefore, the potential for improvement of wildlife habitats would be greater and the potential for degradations of specific wildlife habitat features would be less. Alternative D balances protection of commodity and noncommodity resources.

Impacts from Visual Resources Management

Visual resources management can indirectly impact habitat through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities that could impact habitat are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. This would indirectly provide protection for existing habitat, but prevent enhancement treatments, such as clear-cuts for grouse, or those designed to improve deer and elk habitat. As described in the forested vegetation section, impacts vary widely by guild, species, habitat, and vegetation treatment details.

Impacts from Forestry and Woodland Products Management

The potential impacts from harvesting forest products are the same as those described above under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Livestock Grazing Management

Because grazing allotments in the CdA FO are in forested rather than more typical rangeland vegetation, effects on wildlife would be largely on species that use young seral stage forest. Limited competition could occur between livestock and ungulates, and livestock could disturb or deter migratory birds from nesting. These effects would be primarily on common species, and would be temporary. Such impacts would be minimal due to the small portion of lands allocated to grazing – 4,004 acres under Alternatives A and B, and 1,218 acres under Alternatives C and D.

Impacts from Minerals Management

Minerals development could impact wildlife through habitat fragmentation from roads and mining facilities, and from vegetation removal. Alternatives A and B would allow the most opportunities for mineral developments since only 5,376 acres could continue to be withdrawn. Alternative C proposes an additional 24,270 acres to be withdrawn, while Alternative D identifies only 27 more acres than current management for withdrawal.

Impacts from Recreation Management

Recreational use can degrade wildlife habitats by damaging or removing vegetation. Human presence can also deter some wildlife from using habitat. Generally, impacts will be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866

4. Environmental Consequences

acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on wildlife more than any other alternative.

Impacts Renewable Energy Management

Impacts from biomass removal are described above under Impacts from Vegetation – Forests and Woodlands Management. Migratory bird species and bat mortality associated with wind turbines, and habitat fragmentation from road construction and power lines could occur if wind energy is developed. While current management has no objective to provide opportunities for wind energy, the action alternatives (Alternatives B, C, and D) do and would provide better opportunity to control where development and impacts might occur.

Impacts from Transportation and Travel Management

Roads and trails can fragment habitats and alter home range and migration corridors of wildlife. On a general scale, roads decrease habitat quality and impair populations. Magnitude of effects varies by species, habitat types, size and traffic volume of roads, and seasonal use. Species that require forest interior habitats, have large home ranges, follow distinct migration patterns, or are wary of humans are impacted the most by roads. Roads, trails, and snowmobile access increase human–wildlife interactions and not only degrade wildlife habitats due to surface disturbance, but can also cause displacement and physiological stress to animals, which is especially detrimental in winter. Off-road vehicle travel has the most potential for these impacts to occur. When motorized travel is limited, location or restrictions on use of roads can help avoid or minimize impacts on habitat.

Alternative A is the only alternative that would continue open travel areas (Table 4.2.8-2) and thus would impact wildlife the most. Of the action alternatives, which have no open areas, Alternative B has the greatest amount of designated roads, followed by Alternative D. Alternative C has the least. More designated roads would result in more dispersed motorized travel and access, which would likely result in more impacts on habitat. Although the amount of area closed to motorized vehicles varies by alternative, this variation is not enough that there would be a distinct difference in impacts on habitat. The variation in area open to off-road snowmobile use does not vary enough among Alternatives A, B and D to make a difference in impacts. However, there would be no off-road snowmobile use under Alternative C. This alternative also has the fewest miles of road open to all vehicles, and the most seasonal/class restriction miles. Thus impacts on wildlife would be least under Alternative C.

Table 4.2.8-2 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,459 ac	96,139 ac
Open to Cross Country Snowmobile	66,949 ac	64,157 ac	0 ac	63,373 ac
Road open to all vehicles	13.2 mi	169 mi	53 mi	107 mi
Road with seasonal/class restriction	0 mi	62 mi	65 mi	18 mi
Trail with class restriction	14 mi	51 mi	4 mi	50 mi

Impacts from Lands and Realty Management

Impacts on wildlife can occur from land tenure adjustments, ROW use, and use authorizations. Under land tenure, there is potential to lose or gain productive habitat. Lands are sometimes exchanged out of federal ownership to private timber companies. The timber companies will then harvest the commercial timber thus causing major changes to habitats. The status of habitats on lands that BLM acquires varies greatly. Under

some programs, BLM may obtain productive wetland, riparian, or special status species habitat, and protect it from commercial development. Other times, BLM may acquire lands where drastic changes to habitat have recently occurred. Habitat fragmentation could potentially be reduced via land acquisition and adjustment that reduces the dispersed pattern of public land ownership in the planning area, and increases the size of publicly owned blocks of land. Consolidation is a criterion for retention and acquisition under all alternatives. ROW and use authorizations generally involve road or facilities construction or improvements. These have the potential to fragment habitat, displace animals, or cause them physiological stress.

Alternative A: Wildlife habitat is not a criterion for land retention/acquisition under current management. Therefore, adjustment and exchange offers could result in moving important wildlife habitats out of public ownership. Current management also does not place any specific restrictions on ROW authorizations or use permits. Thus related impacts on wildlife could occur anywhere in the planning area.

Alternative B: This alternative specifies wildlife habitat (hunnable, fishable, trappable, and viewable) as a criterion for land retention/acquisition. This could result in an increase, or prevent loss in the acreage of important wildlife habitats in public ownership, thereby increasing opportunities for habitat protection. This alternative also identifies 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. There would be no potential for related impacts on wildlife to occur in exclusion areas, and the potential would be greatly reduced in avoidance areas. However, these designations would also concentrate authorizations within the remaining 51,548 acres, where there would be an increase in the intensity of localized impacts.

Alternative C: This alternative identifies special status plant and wildlife habitat, as well as riparian and wetland habitat as criteria for retention/acquisition. This would increase the likelihood of increasing or retaining important habitat in public ownership, more than Alternative B. This alternative also specifies 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. The effect on wildlife within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the intensity of localized impacts.

Alternative D: This alternative identifies federally listed special status species habitat as a criterion for acquisition or retention. While this would ensure retention and promote acquisition of special status species habitat, it would allow for other habitat to be exchanged or otherwise adjusted. This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. The effect on wildlife within these areas would be the same as described for Alternative B, corresponding to the slight differences in area. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designations Management

Management of areas with special designations can protect habitat indirectly through limitation on activities, or directly when an area, such as and ACEC, is designated to protect a wildlife value.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. The management specified for Hideaway Islands would maintain habitat for wildlife species that use black cottonwood/red-osier dogwood habitat as well as other cottonwood species. Management of the current Lund Creek RNA would continue to maintain wildlife habitat for riparian-, wetland-, and mature forest-

4. Environmental Consequences

dependent wildlife. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on wildlife habitat are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on wildlife, unless release by Congress. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and Scenic River designation, would include protection of riparian habitat. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership, and very little ability to influence water quality. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would be no added protection unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect wildlife as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of habitat.

Alternative C: This alternative would designate 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional wildlife protection would truly be afforded within this area, unless these WSAs were released by Congress. However, designations on the portions of Rochat Divide and Little North Fork of the Clearwater ACECs that are outside the WSAs, as well as designations at Farnham Forest, Gamlin Lake, Morton Slough, and Windy Bay would directly or indirectly apply protective measures to wildlife and wildlife habitats through use restrictions. Managing the Kootenai River Front to protect habitat for fish species and bald eagles would indirectly protect habitat for these and other riparian-dependent wildlife species as well. Managing Wolf Lodge Bay and the Kootenai River Front ACEC to protect habitat for fish species, bald eagle, Coeur d'Alene salamander, and migratory birds would indirectly protect habitat for migratory birds and other wildlife that use habitats in the bay. Also, all five eligible Wild and Scenic River segments are found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of habitat. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

Impacts from Socioeconomics and Environmental Justice Management

Health and Safety. Generally, actions to remediate contaminated sites to safeguard human health, as would occur under all alternatives, would also affect wildlife habitats and populations, especially those that are dependent on riparian and wetland habitats. Reducing contaminants in the environment reduces the potential for animals to ingest them. It also reduces biomagnification, as contaminants are concentrated as they pass up through the food chain. Removing contaminants from the environment would generally affect piscivorous (fish-eating) species such as osprey and belted kingfisher the most. Remediation and stabilization actions along creeks would promote the growth of riparian vegetation and thus would gradually improve habitat for riparian-dependent wildlife species.

4.2.8.2.3 Cumulative Impacts

Most of the items listed in Table 4.1.3-1, Actions and Events That Contribute to the Cumulative Impacts Scenario, have had or will have impacts on wildlife. Population increases, timber activities, fire, road construction, and mineral development, have had the biggest effects. These actions and their interactions have

resulted in the loss of and changes in habitat across northern Idaho resulting in degraded quality of these habitats and the populations they support. In northern Idaho, changes in vegetation directly and indirectly resulting from the above actions have had the greatest effects on federal lands and include the following:

- Early successional tree species replaced by late successional tree species;
- Larger, older trees replaced by smaller, younger trees (decreased cavity-nesting niche);
- Multistory canopies replaced by single-story canopies (decreased complexity);
- Native species replaced by noxious weed species; and
- Large stands of forest replaced by small stands of forest (increased fragmentation).

On private lands large amounts of wildlife habitat is lost and will continue to be lost as a result of increasing development from population growth in the planning area (41 percent between 1990 and 2000). This loss coupled with the related increased fragmentation from development will shrink the quantity and quality of available habitats in the planning area perhaps increasing the importance of public lands including the BLM and USFS. Implementing the RMP, as well as USFS Forest Plan Revisions would put numerous new mitigation, restoration, and conservation measures in place that would likely reduce the potential extent and severity of impacts from other actions on private lands. Implementing several programs, such as CNFISH, could combine with similar programs on USFS lands to rehabilitate damaged lands such as riparian areas. Actions on BLM lands would have a noticeable effect at the local level; however, given the small total area of scattered federal parcels managed by BLM, the contribution of the CdA FO action to the cumulative effects on wildlife across northern Idaho would be relatively small. Actions by the USFS have a greater potential for contributing to the cumulative effects on wildlife of much of northern Idaho because the agency manages 25 times the number of acres managed by the CdA FO.

Forested vegetation treatments/harvest including prescribed fire in conjunction with similar actions on national forests would, if successful, bring forested lands into a condition more similar to the historic range of variability for species composition and structure. However, short-term effects from logging on wildlife would be present from roads, noise, and presence of humans. Long-term effects would occur for species requiring the denser, more complex structure of mature forests that would be treated. These species could decline until forests mature. Species that select more open, single-canopy forest structures would experience an increase in available habitat from forested vegetation treatments.

The same types of cumulative effects would occur under all alternatives. Generally, Alternative C would contribute the greatest potential for improvement in wildlife habitat in northern Idaho because of numerous management actions, mitigation measures, and restrictions designed to improve wildlife habitats. The least amount of change due to forest vegetation treatments would occur. Alternatives A and B would likely contribute less to any improvements in wildlife habitat conditions across northern Idaho due to more of a focus on commodities, especially under Alternative B. More acres of forest vegetation would be treated than under Alternative C, resulting in more effects on wildlife. Alternative D is generally intermediate between Alternatives B and C in most regards.

4. Environmental Consequences

4.2.9 Special Status Species

4.2.9.1 Special Status Species – Fish

4.2.9.1.1 Methods of Analysis

Objectives and management actions could result in impacts on special status fisheries resources if they directly or indirectly change the quantity, quality, or availability of aquatic habitat or cause a change to populations of special status fish species.

4.2.9.1.2 Impacts

Impacts from Special Status Species Management

All alternatives contain protective measures for fish and aquatic habitat, with a focus on native fish species. Under Alternative A, the INFISH guidance would be followed, whereas under Alternatives B, C, and D a new strategy based on INFISH, called CNFISH, has been tailored to the BLM's land and management capabilities. The goals and objectives of INFISH and CNFISH are the same; the implementation actions to achieve these goals are similar, with only slight differences.

Alternative A: Under Alternative A, the INFISH guidance would be followed. INFISH has criteria for identifying RHCAs and provides specific measures for management. INFISH also provides guidance for identifying priority watersheds but identifies no specific watersheds. Restoration and conservation of riparian areas would increase or maintain the quality of associated aquatic habitats and would help increase or maintain fish populations. Also under this alternative, fish passages would be improved at all road crossings, unless installation of a barrier would be beneficial to native fish.

Alternatives B, C, and D: Under these alternatives, CNFISH would be implemented. CNFISH has criteria for identifying RCAs and provides specific measures for management. Additionally, four conservation and eight restoration watersheds, with priority levels ranging from moderate to high, are identified under this alternative. Implementing CNFISH and identifying priority watersheds under Alternative B could result in slightly more riparian habitat protection than under Alternative A since it is possible that slightly fewer restoration and conservation actions would be implemented using Alternative A's INFISH guidance. Restoring and conserving riparian areas would increase or maintain the quality of associated aquatic habitats and would help increase or maintain fish populations. Also, under CNFISH, when constructing new, replacement, and reconstructed culverts, bridges, and other stream crossings, fish passage would be provided unless installation of a migration barrier would be beneficial to native fish.

Alternatives B, C, and D have added emphasis on protection of bull trout and white sturgeon habitat. Alternative C adds an action recommending withdrawal of lands within 300 feet of special status fish species streambeds, which would increase protection of this aquatic habitat from the impacts of mineral development (see Impacts from Minerals Management below).

Also, some protection of special status fish habitats would be afforded as a result of bald eagle protection measures found in the action alternatives (Alternatives B, C, and D). Buffers surrounding nest sites and protection of snag habitats could reduce the potential impacts on riparian areas from general human uses.

Management measures, under the action alternatives, for the recovery of the yellow-billed cuckoo, a riparian-dependent species, would also protect riparian habitats. Healthy riparian habitats provide water quality, shade, and invertebrate food sources for special status fish populations.

Impacts from Soils Management

Under all alternatives, BMPs and INFISH RHCA/CNFISH RCA buffers would minimize soil erosion and protect riparian habitats. This would indirectly protect special status fish species and habitats by increasing proper functioning condition of riparian habitats, including retention of large woody debris characteristic of natural conditions, retention of thermal water quality, and maintenance of surface, channel and bank characteristics.

Impacts from Water Resources

Under all alternatives, special status fish species and habitat would be enhanced and protected by management measures designed to improve or maintain water quality. These include watershed maintenance and restoration. The potential for improvement under the action alternatives (Alternatives B, C, and D) could be slightly more than under Alternative A, because there is more specific direction and identified actions to restore and enhance watersheds.

Impacts from Vegetation – Forests and Woodlands Management

The potential for degradation of fish habitat from forest vegetation treatments would be greatly reduced by implementation of INFISH (Alternative A) and CNFISH (Alternatives B, C, and D). Because CNFISH more clearly defines implementation measures than INFISH, the action alternatives (Alternatives B, C, and D) would increase protection and restoration activities within RCAs over Alternative A. The actions associated with forest vegetation treatments could impact special status fish populations and aquatic habitats as follows:

- *Increased sedimentation on fish-bearing streams.* The relative contribution of sediment by various forestry practices appears to be moderate from clear-cutting (i.e., higher than from selective cutting or patch-cutting), moderately high from skid trails, and moderate from site preparation. By far, sediment generation is greatest from logging roads, particularly if built near streams (Waters 1995). Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from forest vegetation treatments could occur even if the treatments take place outside the buffer zones.
- *Altered stream flow regimes.* Water yield increase resulting from vegetation removal could cause scouring of stream channel bottoms, decreasing fish habitat and food sources (BLM 1982a). The potential for this to occur is relatively low, considering the riparian buffer zones, but localized scouring could occur.
- *Changes in water temperatures.* Increases in water temperature could occur in areas where streamside vegetation is removed, increasing the amount of sunlight reaching the water. The buffer zones identified in INFISH/CNFISH would likely prevent vegetation treatments from occurring in these areas. If treatments were to occur in riparian areas, increased water temperatures could reduce suitable habitat for cold water fish species. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates decreases.

The magnitude of impacts would correspond with the number of acres treated. Alternative A would treat 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C would reduce treatments 83 percent reduction, while D would increase treatments 17 percent.

4. Environmental Consequences

In addition, Alternatives C and D would specifically conserve and restore aspen, birch, and cottonwood stands. This would maintain or improve the functional condition of riparian areas, and thus special status fish habitat, because these tree species are often associated with riparian zones.

Impacts from Vegetation – Riparian and Wetlands Management

All alternatives set objectives for achieving PFC within riparian and wetland areas. Striving to achieve PFC would maintain and/or improve riparian habitat and its associated function, including vegetative density, bank stability goals, and thermal regulation, for special status fish populations. Alternatives A, C, and D set a PFC objective of 75 percent, while the objective under Alternative B is 50 percent. Thus Alternative B would be least effective at protecting special status fish habitat. Alternatives B, C, and D contain actions, not included under Alternative A, for active maintenance and improvement measures to help reach PFC, which would improve the potential for success. All alternatives also have an objective for inventory and assessment of riparian and wetland areas. Inventory data could be used to identify and prioritize degraded special status fish habitat for restoration.

Impacts from Vegetation – Invasive Species and Noxious Weeds Management

Under all alternatives, herbicide treatments of invasive species have the potential to adversely affect water and special status fish habitat. However, careful management and monitoring of applications would minimize this potential. Depending upon the species, large noxious weed infestations tend to provide inferior riparian habitat, which can degrade special status fish habitat. Noxious weed control measures would reduce the potential for this impact to occur. The level of weed control is similar for all four alternatives, and would be slightly higher under Alternative C because it includes a specific requirement for vehicle wash stations.

Impacts from Fish and Wildlife Management

The impacts from implementing INFISH and CNFISH guidance are discussed below under Impacts from Special Status Species Management.

Fish and wildlife management measures to restore and enhance aquatic habitat for sport fish would be implemented under Alternatives B and D, but not C. These measures would increase the quality and quantity of sport fish habitat. In addition, fishing pressure in these areas could increase; resulting in elevated riparian impacts from foot traffic and river access, compared to Alternatives A. Growing nonnative sport fish populations could be detrimental to native special status fish due to competition or predation.

Deer habitat protection measures under Alternative A may include vegetation treatments. Alternatives B and D emphasize use of vegetation treatments for this purpose. Although measures to protect riparian areas should also protect special status fish habitats, there are potential impacts on this habitat from vegetation treatments. These impacts are described under the Impacts from Vegetation – Forests and Woodlands section. Deer habitat protection measures under Alternative C do not emphasize vegetation treatments, and related impacts would not occur.

Impacts from Wildland Fire Management

Fire suppression may involve the use of retardant and heavy equipment. When retardant enters water bodies, it can degrade special status species habitat. Heavy equipment can disturb soil which can lead to increased sediment in streams. INFISH and CNFISH contain standards and guidelines for fire and fuels management, which would reduce the potential for these impacts. Also, under the action alternatives (Alternatives B, C, and D) riparian habitat is a specific criterion for consideration when establishing fire management priorities. Under Alternative C, actions to identify areas where fuels treatments will improve or protect noncommodity

natural resources (such as aquatic habitat) are specific to this alternative and offer the greatest potential for improved habitat conditions of any of the alternatives.

The action alternatives also identify 52,319 acres where wildland fire use would be considered. The short-term effect of fire use would be removal of riparian vegetation and potential degradation of special status fish habitat. However, the return of fire to its natural role in the ecosystem would lead to long-term enhancement of riparian vegetation and habitat.

Impacts from Visual Resources Management

Visual resources management can indirectly impact riparian and wetland vegetation and special status fish habitat through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. While 12-15 percent (varying slightly by alternative) of this VRM II area is within RHCAs/RCA's where riparian vegetation is already protected, the constraints placed on the remaining VRM II areas would reduce the potential for actions to degrade special status fish habitat, corresponding in effect to the total area classified.

Impacts from Forestry and Woodland Products Management

Potential impacts from forestry and woodland products are the same as those described under the Impacts from Vegetation – Forests and Woodlands section for vegetation treatments.

Impacts from Livestock Grazing Management

Livestock can impact riparian vegetation and aquatic habitat around watering locations by trampling and grazing plants and by soil compaction, which reduces riparian species cover and diversity, and degrades functioning condition. Under Alternative A, approximately 4,004 acres of land would be available for livestock grazing. Only 37 of these acres are within riparian zones. Alternatives C and D allocate only 1,218 acres for livestock grazing, with only 11 acres in riparian zones. Thus impacts on special status fish habitat from livestock grazing would be negligible under any alternative. Any impacts that might occur would continue to be reduced by Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management and grazing guidelines from INFISH/CNFISH.

Impacts from Minerals Management

Implementing INFISH and CNAFISH would protect special status fish habitat from degradation resulting from mining. The actions associated with mining could impact special status fish populations and aquatic habitats as follows:

- Increased sedimentation on fish-bearing streams. Excess sediment generation can be the direct result of surface disturbances for mineral extraction, drilling, and facilities construction and also for road construction, maintenance, and use. Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish. Increased sedimentation resulting from mining could occur even if the mining activities are outside the buffer zones.

4. Environmental Consequences

- Introducing hazardous materials to fish-bearing rivers, streams, and lakes. Hazardous materials from the mining activities themselves and from equipment use and maintenance could be released into fish-bearing water bodies. Associated with locatable minerals extraction are mine tailings, which can introduce heavy metals into water. Similarly, the extraction of fluid materials can result in oil or other fluid releases, which could degrade water quality. An example of this is the releases associated with well flow testing for geothermal power development. Spills can also occur from equipment that uses hazardous fluids such as gasoline and oil. The impact on fish populations depends upon the type of hazardous material released and the quantity of the release. If severe enough, mortalities can occur and habitat can become unsuitable for aquatic life.
- Altered stream flow regimes. Water yield increases resulting from vegetation removal and alteration of natural drainage could result in scouring of stream channel bottoms and decreasing fish habitat and food sources. The potential for this to occur is relatively low, considering the INFISH/CNFISH riparian buffer zones, but localized scouring could occur.
- Changes in water temperatures. Increases in water temperature could occur in areas where streamside vegetation is removed, increasing the amount of sunlight reaching the water. The buffer zones identified in INFISH would likely prevent mining from occurring in these areas. If mining were to occur in riparian areas, increased water temperatures could reduce suitable habitat for cold water fish species. As water temperature increases, the amount of available dissolved oxygen for fish and aquatic invertebrates is decreased.

Currently (under Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on special status fish than Alternative C.

Impacts from Recreation Management

Recreational use can degrade special status species habitats by damaging or removing vegetation. Human presence can also deter some fish species from using habitat. Generally, impacts will be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on special status fish more than any other alternative.

Impacts from Renewable Energy Management

Impacts on special status fish from extraction of biomass fuels would be the same as those identified from vegetation treatments under Impacts from Vegetation-Forests and Woodlands. Road construction and use, or power line installation associated with wind energy development, could result in soil erosion or removal of riparian vegetation, which would degrade functioning conditions in affected riparian zones. Implementation of INFISH/CNFISH restrictions and BMPs under all alternatives would minimize these effects.

Impacts from Transportation and Travel Management

Use of roads and trails (except for snowmobile use) can result in increased sedimentation to special status fish-bearing streams, rivers, and lakes. Increased sedimentation in streams can affect fish populations in a variety of ways, including direct mortality, reduction in suitable spawning gravels, suffocation and mortality of eggs, and displacement of individual fish.

Table 4.2.9-1 summarizes the transportation and travel management designations for the CdA FO for each alternative. Alternative A is the only alternative that would continue to have open travel areas. The greatest potential for increased sedimentation occurs in areas open to off-road motorized travel where new roads and trails are being created and overland riding can cause erosion. Limited travel areas would be less likely to cause increased sedimentation than open travel areas. Closed travel areas would protect special status fish-bearing streams from the effects of road and trail use. Consequently, Alternative A is likely to have the greatest amount of sedimentation impacts of the four alternatives. Impacts affect special status fish species more when they occur within riparian vegetation. See the section on Impacts from Travel Management on Riparian Vegetation for more specific information.

Table 4.2.9-1 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,549 ac	96,139ac
Road open to all vehicles	13.2 mi	169 mi	53 mi	107 mi
Road with seasonal/class restriction	0 mi	62 mi	65 mi	18 mi
Trail with class restriction	14 mi	51 mi	4 mi	50 mi

Impacts from Lands and Realty Management

ROW authorizations and use permits are generally for activities such as road construction or facilities development. Construction, road use, and heavy equipment can cause soil erosion or remove riparian vegetation, resulting in degradation to special status fish habitat. Under current management there are no restrictions on ROW authorizations or land use permits. Thus related impacts on aquatic habit could occur anywhere in the planning area, within the limits of INFISH restrictions. The action alternatives (Alternatives B, C, and D) each identify ROW exclusion areas where no ROW authorizations or land use permits would be allowed, and ROW avoidance areas authorizations would only be allowed when there was no other practical location. All RCAs are identified as avoidance areas under the actions alternatives. In addition, between 3,623 and 3,732 acres of RCAs fall within ROW exclusion areas. Also, when actions are authorized within RCAs, CNFISH restrictions would apply. As a result, potential impacts from lands and realty authorization on aquatic habitat would be greatly reduced.

There is also potential for indirect impacts on special status fish habitat from land tenure designations. If lands with special status fish habitat are exchanged or otherwise subject to adjustment, conservation measures outlined in this plan would no longer be enforced. However, if the BLM acquires lands with special status fish habitat, then protective measures would apply. Alternative A does not identify special status fish habitat as a criterion for retention or acquisition. Alternative B identified wildlife habitat (hunnable, fishable, trappable, and viewable) as a criteria. This could indirectly result in retention or acquisition of special status fish habitat. Alternative C identifies special status wildlife (which would include fish) habitat as a retention/acquisition criteria. Alternative D lists habitat for federally listed threatened or endangered species among criteria for retention/acquisition.

Impacts from Special Designations Management

Special designations, such as ACECs, could help to protect riparian and wetland vegetation, thus protecting special status fish habitat. Localized protective management of stream segments found eligible or suitable for

4. Environmental Consequences

Wild and Scenic River designation, all of which provide habitat for special status fish, could provide similar protection.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Special status fish habitat would be protected within these areas as a result. Lund Creek RNA would be redesignated specifically to protect special status fish (bull trout and westslope cutthroat trout). However, the entire area falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on aquatic habitat are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on special status fish, unless the WSA was released by Congress. Indefinite protective management of five stream segments totaling 28 miles, which are eligible for Wild and Scenic River designation, would include protection of riparian vegetation. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership, and very little ability to influence habitat. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would actually be little added protection.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect special status fish as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of riparian vegetation.

Alternative C: This alternative would protect aquatic habitat through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded in these areas. The portions of the Little North Fork Clearwater Headwaters ACEC that are outside of the Grandmother Mountain WSA, would be managed to protect habitat for special status fish (bull trout and westslope cutthroat trout), as would all of Wolf Lodge Bay and Killarney Lake ACECs. Gamlin Lake would also emphasize protection of riparian and wetland habitat, and therefore protect potential habitat. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of the riparian vegetation that they contain. Little North Fork Clearwater Headwaters, Wolf Lodge Bay, Gamlin Lake, and Killarney Lake are not identified as ACECs under this alternative. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

Impacts from Socioeconomics and Environmental Justice Management

Health and Safety. Hazardous and contaminated site cleanups potentially improve fish habitat where contamination has occurred near fish-bearing streams. Activities such as site restrictions and rock dump stabilizations limit the potential for hazardous materials to reach fish-bearing water bodies. Cleanup efforts may result in water quality improvements, stream stabilizations, and restoration of watershed areas. Potential impacts on special status fish species are the same for all alternatives.

4.2.9.1.3 Cumulative Impacts

Most of the items listed in Table 4.1.3-1 have had or will have impacts on special status wildlife. Cumulative effects described under Section 4.2.8.1, *Cumulative Effects on Fish* would also apply to those fish species listed

under the ESA or designated by BLM as sensitive. Many cumulative actions and events discussed regarding water quality under Section 4.2.3, *Water Resources* would also have cumulative impacts on special status fish habitat and populations.

4.2.9.2 Special Status Species – Terrestrial Wildlife

4.2.9.2.1 Methods of Analysis

This section presents potential impacts on special status terrestrial wildlife species, including special status migratory birds. Objectives and management actions could result in impacts on these species if they directly or indirectly change the quantity, quality, or availability of habitat, cause a change to species populations, result in take, or cause status change (listing/delisting). The following is a list of habitat characteristics used in this analysis to identify potential for change to the indicators of habitat and population:

- Seral Stage of Forest Vegetation;
- Quantity of trees with cavity nesting potential;
- Size of trees;
- Complexity of canopy structure;
- Quantity of large woody debris;
- Quantity of invasive species;
- Measures of habitat fragmentation;
- Tree cover along wildlife travel corridors such as streams and ridge tops;
- Proper functioning condition of riparian and wetland habitats;
- Water Quality;
- Population size;
- Species density; and
- Species diversity.

4.2.9.2.2 Impacts

Impacts from Special Status Species Management

Under all alternatives, actions to comply with the ESA and Memorandum 80-722 and conserve threatened and endangered species would likely eliminate take and would contribute to recovery of listed species. Actions to reduce impacts on sensitive species could improve, or at least slow down losses of, habitat conditions and population parameters for these species. Actions designed to ensure that rare plant populations are stable or continue to improve could indirectly have similar effects on special status wildlife that use the habitat types occupied by special status plants and conversely could decrease habitat quality for species that don't use these habitats.

Implementation of INFISH (Alternative A) and CNFISH (Alternative B) guidelines would improve the quality of habitat for riparian-dependent special status wildlife—such as bald eagle, yellow-billed cuckoo, Coeur d'Alene salamander, willow flycatcher, Idaho giant salamander, Calliope hummingbird, and Barrow's goldeneye—and could lead to an increase in density and diversity of these species.

4. Environmental Consequences

Alternative A: A lack of specific actions regarding most special status species could lead to less potential for progress toward recovery of these species than under the other alternatives. Implementing recovery activities for wolverines would at least maintain and possibly increase the area of suitable wolverine habitat. These actions could help avoid a future need to list the species under the ESA by increasing breeding success and survival.

Alternatives B, C, and D: Implementing recovery activities for woodland caribou would at least maintain and would likely increase the area of suitable caribou habitat, and it even could contribute to the recovery of the species. Special status wildlife species that also use broad-elevation old forest source habitats could be affected by these actions as well, such as fisher and northern flying squirrel.

Implementing recovery activities for bald eagle would at least maintain and possibly increase the area of suitable bald eagle habitat, including nest and roost sites and foraging locations and could contribute to the recovery of the species by increasing breeding success and survival. Other special status wildlife species that use riparian habitats could be affected by these actions as well.

Implementing recovery activities for Canada lynx would at least maintain and possibly would increase the area of suitable Canada lynx habitat, including denning and snowshoe hare habitats and linkage areas. These actions could contribute to the recovery of the species by increasing breeding success and survival.

Special status wildlife species that use a mosaic of forest habitats could be affected by these actions as well, such as wolverine and blue grouse. Implementing recovery activities, in compliance with interagency grizzly bear management guidelines, including maintaining the BLM's proportionate share of minimal habitat values, would at least maintain and possibly increase the area of suitable grizzly bear habitat. These actions could contribute to the recovery of the species by increasing breeding success and survival.

Implementing recovery activities for gray wolf would at least maintain and possibly would increase the area of suitable gray wolf habitat, including denning and amount of prey species. In addition, reducing take could contribute to the recovery of the species by increasing breeding success and survival.

Implementing recovery activities for fisher would at least maintain and possibly would increase the area of suitable fisher habitat. These actions could help avoid a future need to list the species under the ESA by increasing breeding success and survival.

Actions for wolverines would have similar effects as under Alternative A.

Impacts from Soils Management

Under all alternatives, BMPs and other actions to prevent erosion generally improve vegetation communities, especially in riparian areas and thus indirectly improve associated special status wildlife habitats. Direction from INFISH and CNFISH would protect special status species that occupy riparian areas, such as bald eagle, yellow-billed cuckoo, willow flycatcher, and Idaho giant salamander.

Impacts from Water Resources Management

Under all alternatives, effective watershed management, which minimizes erosion, could result in healthy and diverse plant communities, which in turn provide special status wildlife habitat especially in riparian areas. Healthy watersheds improve fish habitat, which in turn provides foraging opportunities for piscivorous (fish-eating) special status wildlife.

Impacts from Vegetation – Forests and Woodlands Management

Impacts on special status terrestrial wildlife from forests and woodlands management would be similar to those impacts described for terrestrial wildlife in Section 4.2.8.2.2, Impacts from Vegetation - Forest and Woodlands Management.

Impacts from Vegetation – Riparian and Wetland Management

Any actions that would improve riparian and wetland functioning condition would in turn improve habitats for riparian- and wetland-dependent special status wildlife species such as the bald eagle, yellow-billed cuckoo, Calliope hummingbird, and Cordilleran flycatcher.

Alternatives A, C, and D have an objective to achieve PFC for 75 percent of the riparian and wetland areas. Alternative B has a PFC objective of only 50 percent. Unlike current management, the action objectives (Alternatives B, C, and D) specify actions for maintaining and improving riparian and wetland areas. Thus the specified objective would be more likely met under the action alternatives.

Impacts from Vegetation – Nonforested Management

Current management calls for meeting the Idaho Rangeland Health Standards, which would protect nonforested vegetation habitat. The action alternatives (Alternatives B, C, and D) have more specific actions to provide more protection. Alternatives C and D place more emphasis on nonforested vegetation by requiring active prevention of off-road motorized vehicle use and restoration of native plant communities.

Impacts from Vegetation – Invasive Species and Noxious Weeds Management

Under all alternatives, actions to prevent and control invasive and invasive species using integrated weed management techniques could reduce the area and severity of damage to special status wildlife habitats by reducing the quantity of invasive species and thus decrease the competition, allowing native species, vital to special status wildlife, to increase (or at least slow down the rate of decrease).

Impacts from Fish and Wildlife Management

Impacts from implementing INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) are addressed below under Impacts from Special Status Species Management.

Actions proposed to restore and enhance aquatic habitat for sport fish, under Alternative B, could improve habitat for riparian-dependent special status wildlife by planting for streamside shade. Effects on other special status wildlife from vegetation treatments for deer and elk would vary dramatically by guild and habitat preferences as well as by type of treatment.

Under all alternatives, seasonally closing roads in crucial and important winter range for deer and elk would reduce potential impacts on sensitive species that use the same habitat. Under Alternatives B and D, emphasis on actively treating vegetation to improve deer and elk winter range would likely result in special status species habitat changes. Actions under Alternative B would provide for more treatments and more effects on populations, than under Alternative D. See Impacts from Vegetation – Forests and Woodlands Management for information regarding impacts from such treatments. Treatments could result in increases in big game populations, which could potentially lead to increases in populations of special status species that prey on big game.

All alternatives call for closing and partially obliterating roads, which would reduce numerous direct, indirect, cumulative, and additive impacts on many species of forest special status wildlife, such as fisher, wolverine,

4. Environmental Consequences

Canada lynx, and grizzly bear that could be disturbed by vehicular traffic and habitats that are fragmented by roads.

Cavity-dependent wildlife, such as woodpeckers, depends on the presence of snags (dead standing trees) for cover and reproduction. Population sizes of these species are limited by the availability of snags. Snag management actions would leave snags for cavity-dependent special status wildlife, such as Lewis' woodpecker, flammulated owl, and fisher. Related actions under Alternative A would result in more snags than Alternative B, but fewer than under Alternatives C or D. Under Alternatives D and C, actions to retain large trees for snag recruitment, retaining and promoting late-seral forests through vegetation treatments, and emphasizing uneven-aged silvicultural management techniques, would result in a greater area of appropriate habitats for late-seral-dependent special status wildlife species.

Buffer restrictions around special status raptor nests, such as northern goshawk, boreal owl, flammulated owl, and great gray owl, would offer limited protection of these species and their breeding habitats. A larger buffer would generally be more effective. Alternatives A and C would implement a 100-yard buffer. Alternative B only implements a 50-yard buffer. Alternative D would implement a 100-yard buffer outside, and 50 yards within urban and rural areas.

Under Alternatives A, B, and D, creating small clear-cuts and planting forage, such as white Dutch clover (Alternatives A and B) and native grasses and forbs (Alternative D) for grouse production could decrease potential habitat quality for species requiring forest interior such as fisher.

Enhancing habitat for furbearers under the action alternatives (Alternatives B, C, and D) via implementing CNFISH and maintaining and enhancing old growth forest stands would at least maintain habitat and populations for special status furbearers, such as fisher and wolverine, as well as for other old growth-dependent special status wildlife species. These alternatives also call for implementing HMPs specific to waterfowl, which could enhance habitat and attract waterfowl to these areas, possibly enhancing waterfowl production locally and increasing hunting opportunities. These HMPs could increase or decrease the quantity and quality of habitat for other wetland wildlife such as migratory birds, depending on the site-specific prescription of each HMP.

Implementing HMPs specific to waterfowl under Alternatives B and D, which could include foraging and breeding habitat improvements via vegetation and hydrology manipulation, could enhance or possibly degrade habitat for wetland special status wildlife such as black tern, trumpeter swan, and long-billed curlew, depending on species and the site-specific prescription of each HMP.

Alternative C, prohibiting vegetation treatments that could result in the take of migratory birds, would eliminate many vegetation treatment options between May 15 and July 15; this would reduce the take of migratory birds (to include special status species) as well as reduce mortality and disturbance of other special status forest species. Alternative D calls for avoiding and minimizing (not prohibiting) vegetation treatments that could result in take, to the extent practicable. This would reduce the take of migratory birds and reduce mortality and disturbance of other forest special status species, but not as well as Alternative C.

Alternatives C and D would provide access for bats when closing abandoned mines. This would maintain or increase the potential for special status bats, such as fringed myotis and Townsend's big-eared bat, to use these mines and thus could maintain or increase bat populations.

Impacts from Wildland Fire Management

Actions under Alternatives A and B place more emphasis on protecting commercially valuable resources than on resources such as special status wildlife. Thus, potential improvements of special status species habitat from wildland fire would be less and potential degradations of specific habitat features could be greater than under Alternatives C or D. Under Alternative C wildland fire management actions would have more emphasis on noncommodity resources. Therefore, the potential for improvement of habitats would be greater and the potential for degradation of specific habitat features would be less. Alternative D balances protection of commodity and noncommodity resources.

Impacts from Visual Resources Management

Visual resources management can indirectly impact special status species habitat through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in WSAs where most management activities that could impact habitat are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. This would indirectly provide protection for special status species habitat.

Impacts from Forestry and Woodland Products Management

Impacts are described under the Impacts from Vegetation – Forests and Woodlands Management section.

Impacts from Livestock Grazing Management

Because grazing allotments in the CdA FO are in forested rather than more typical rangeland vegetation, effects on special status wildlife would be largely on species that use young seral stage forest. Few special status wildlife species in the planning area are young seral stage-dependent. Livestock could disturb or deter special status migratory birds from nesting. Such impacts would be minimal due to the small portion of lands allocated to grazing – 4,004 acres under Alternatives A and B, 1,218 acres under Alternatives C and D. There are no grazing allotments under any alternative within caribou, grizzly bear, and Canada lynx management units, and none within wolf habitat or known bald eagle wintering areas. Therefore, grazing is unlikely to have an effect on listed species.

Impacts from Minerals Management

Minerals management impacts on special status wildlife potentially occur from surface disturbance and thus loss of habitat as well as disturbances from noise and movement. Alternatives A and B would allow the most opportunities for mineral developments since only 5,376 acres would be withdrawn from mining. Alternative C proposes an additional 24,370 acres to be withdrawn, while Alternative D identifies only 27 more acres than current management for withdrawal.

Impacts from Recreation Management

Recreational use can degrade special status species habitats by damaging or removing vegetation. Human presence can also deter some wildlife from using habitat. Generally, impacts will be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under

4. Environmental Consequences

Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on special status wildlife more than any other alternative.

Impacts from Renewable Energy Management

Impacts from biomass removal are described above under Impacts from Vegetation – Forests and Woodlands Management. Special status migratory bird species and bat mortality associated with wind turbines, and habitat fragmentation from road construction and power lines could occur if wind energy is developed. While current management has no objective to provide opportunities for wind energy, the action alternatives (Alternatives B, C, and D) would provide better opportunity to control where development and impacts might occur.

Impacts from Transportation and Travel Management

Roads and trails can fragment habitats and alter home range and migration corridors of wildlife. On a general scale, roads decrease special status species habitat quality and impair populations. The magnitude of effects varies by species, habitat types, size and traffic volume of roads, and seasonal use. Species that require forest interior habitats (fisher), have large home ranges (grizzly bear), have distinct migration patterns, or are wary of humans (wolverine) are impacted the most by roads and OHV use. Roads, trails, and snowmobile access increase human–wildlife interactions. Vehicles can degrade special status species habitats from surface disturbance and can cause displacement and physiological stress to animals, which is especially important in winter. Off-road vehicle travel would have the most potential for these impacts to occur. When motorized travel is limited, location or restrictions on use of roads can help avoid or minimize impacts.

Alternative A is the only alternative that would continue open travel areas (Table 4.2.9-2) and thus would likely impact special status wildlife the most. Of the action alternatives, which have no open areas, Alternative B has the most amount of designated roads, followed by Alternative D. Alternative C has the least. More designated roads would result in more dispersed motorized travel and access, which would likely result in more impacts on habitat. Although the amount of area closed to motorized vehicles varies by alternative, this variation is not enough that there would be a distinct difference in impacts on habitat. The variation in area open to off-road snowmobile use does not vary enough among Alternatives A, B and D to make a difference in impacts. However, there would be no off-road snowmobile use under Alternative C. This alternative also has the fewest miles of road open to all vehicles, and the most seasonal/class restriction miles. Thus impacts on special status species would be least under Alternative C.

Table 4.2.9-2 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	32,567 ac	96,607 ac	96,459 ac	96,139 ac
Open to Cross Country Snowmobile	66,949 ac	64,157 ac	0 ac	63,373 ac
Road open to all vehicles	13.2 mi	169 mi	53 mi	107 mi
Road with seasonal/class restriction	0 mi	62 mi	65 mi	18 mi
Trail with class restriction	14 mi	51 mi	4 mi	50 mi

Impacts from Lands and Realty Management

Impacts on special status species can occur from land tenure, ROW authorizations, and use authorizations. Under land tenure, there is a potential to lose or gain productive habitat. Lands are sometimes exchanged out of federal ownership to private timber companies. The timber companies will then harvest the commercial timber thus causing major changes to habitats. The status of habitat on lands that the BLM acquires varies

greatly. Under some programs, the BLM may obtain productive wetland, riparian, or special status species habitat, and protect it from commercial development. Other times, the BLM may acquire lands where drastic changes to habitat have recently occurred. Habitat fragmentation could also potentially be reduced via land acquisition and adjustment that reduces the dispersed pattern of public lands ownership and increases the size of publicly owned blocks of land. Consolidation is a criterion for retention and acquisition under all alternatives. ROW and use authorizations generally involve road or facilities construction or improvements. These have the potential to fragment habitat, displace animals, or cause them physiological stress.

Alternative A: Special status species habitat is not a criterion for land retention/acquisition under current management. Therefore, adjustment and exchange could result in loss of important habitats from public ownership. Current management also does not specify any specific restrictions on ROW authorizations or use permits. Thus related impacts on special status species could occur anywhere in the planning area.

Alternative B: This alternative specifies wildlife habitat (hunnable, fishable, trappable, and viewable) as a criterion for land retention/acquisition. This could indirectly result in an increase, or prevent moving important special status species habitats out of public ownership, thereby increasing opportunity for habitat protection. This alternative also identifies 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. There would be no potential for related impacts on wildlife to occur in exclusion areas, and the potential would be greatly reduced in avoidance areas. However, these designations would also concentrate authorizations within the remaining 51,548 acres, where there would be an increase in the intensity of localized impacts.

Alternative C: This alternative identifies special status plant and wildlife habitat, and riparian and wetland habitat as criteria for retention/acquisition. This would increase the likelihood of increasing or retaining important habitat in public ownership, more than Alternative B. This alternative also specifies 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. The effect on impacts on wildlife within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the intensity of localized impacts.

Alternative D: This alternative identifies federally listed special status species habitat as a criterion for acquisition or retention. While this would insure retention and promote acquisition of special status species habitat, it would allow for other special status species habitat to be exchanged or otherwise adjusted. This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. The effect on impacts on wildlife within these areas would be the same as described for Alternative B, corresponding to the slight differences in area. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designation Management

Generally special management areas such as ACECs, RNAs, WSAs, and wild and scenic rivers result in protection of special status wildlife from human activities and long-term improvement or at least maintenance of habitat quality.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Hideaway Islands would specifically be designated to protect bald eagles. Management of the current Lund Creek RNA

4. Environmental Consequences

would continue to maintain wildlife habitat for riparian-, wetland-, and mature forest-dependent wildlife, to include the Coeur d'Alene Salamander. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on water quality are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on wildlife, unless released by Congress. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and Scenic River designation, would indirectly conserve special status wildlife habitat, especially for riparian species such as bald eagle, yellow-billed cuckoo, and Barrow's goldeneye. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership, and little ability to influence habitat. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would be no added protection unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect wildlife as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of habitat.

Alternative C: This alternative would directly or indirectly protect special status species through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded within this area, unless these WSAs were released by Congress. Several of these ACECs would be designated to specifically protect special status species. Values protected by designation of the Rochat Divide would include wolverine denning sites. Little North Fork of the Clearwater would be designated to protect the Coeur d'Alene Salamander among other values. Farnham Forest includes grizzly bear habitat among protected values. Morton Slough and Kootenai River would be designated to protect bald eagles. Wolf Lodge Bay ACEC would protect bald eagle, Coeur d'Alene salamander, and migratory birds. Also, all five eligible Wild and Scenic River segments are found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. Some of the ACECs that would be designated for special status species under Alternative C (Kootenai River Front, Wolf Lodge Bay, and Morton Slough) are not included under Alternative D. These designations would afford a corresponding slight increase in protection of special status wildlife. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

Impacts from Socioeconomics and Environmental Justice Management

Health and Safety. Generally, actions under all alternatives to remediate contaminated sites to safeguard human health would also affect special status wildlife habitats and populations, especially those that are dependent on riparian and wetland habitats. Reducing contaminants in the environment reduces the potential for animals to ingest them. It also reduces biomagnification, as contaminants are concentrated as they pass up through the food chain. Removing contaminants from the environment through such actions as mitigating newly discovered hazards within 120 days and pursuing the reduction of hazards at abandoned mine sites, would generally affect piscivorous (fish-eating) species such as bald eagle as well as bats which forage on insects near water the most. Closing abandoned mines has potential to impact special status bat species. If they are closed in a manner to allow access to bats, then these bat populations would be preserved. Closures of mines without bat access could prevent their use in the future. Remediation and stabilization actions along creeks

would promote the growth of riparian vegetation and reduce sediment loads, and thus would gradually improve habitat for riparian-dependent special status wildlife species.

4.2.9.2.3 Cumulative Impacts

Most of the items listed in Table 4.1.3-1 have had or will have impacts on special status wildlife. Cumulative effects described under Section 4.2.8.2, Cumulative Effects on Terrestrial Wildlife, also apply to those wildlife species listed under the ESA or designated by BLM as sensitive. Actions and mitigation measures to comply with the ESA and work towards recovery would make a small contribution to recovery of listed species in northern Idaho due to the small quantity of BLM-managed lands. The USFS has by far the greatest control over the health of listed and sensitive species in northern Idaho due to the large amount of land ownership. Development on private lands in northern Idaho would also put additional pressure on special status species. Implementing Alternative C would contribute the greatest amount towards recovery and prevention of listing new species, Alternative A the least, followed by Alternative B. Alternative D would generally be intermediate between Alternatives B and C. No alternative would contribute towards take of a listed species.

4.2.9.3 Special Status Species– Plants

4.2.9.3.1 Methods of Analysis

Impacts on special status plants are indicated by changes to occurrence, population, vigor, or habitat. The objective and actions, as well as the actions that could result from the alternatives were analyzed to determine if they would affect any of these indicators.

4.2.9.3.2 Impacts

Impacts from Special Status Species Management

Under all alternatives, actions to comply with the ESA and Memorandum 80-722 and conserve threatened and endangered species would likely eliminate take and could contribute to recovery of listed species. Actions to reduce impacts on sensitive species could improve, or at least slow down losses of, habitat conditions and population parameters for these species. Actions for special status plants, including using inventory and monitoring data as a basis for management decisions, cooperating with other agencies, following mitigation guidelines, and employing conservation strategies, would likely maintain or improve special status plant populations. Actions designed for special status fish species, such as implementing INFISH (Alternative A) and CNFISH (Alternative B), would also increase and improve the habitat of riparian/aquatic special status plant species. Many recovery actions that conserve habitat for listed species could also indirectly protect populations or habitat of other special status plant species that occur in these same habitats.

Additional actions for special status plants found in Alternatives C and D, especially prioritizing weed control, could increase the probability of improving the vigor and distribution of these species over Alternatives A or B. These actions could aid in preventing future ESA listings for sensitive species and recovering listed species. Alternative D further identifies conservation measures specifically for maintaining and improving threatened and endangered populations and habitat. These actions could contribute to recovery of listed species.

Impacts from Soils Management

Under all alternatives, BMPs and other actions to prevent erosion generally improve vegetation communities, especially in riparian areas, and thus indirectly improve associated special status plant habitats.

4. Environmental Consequences

Impacts from Water Resources Management

Under all alternatives, effective watershed management, which minimizes erosion, could result in healthy and diverse plant communities, and potentially can result in suitable habitats for special status plants or improvement in existing conditions especially in riparian areas. Special status plant species dependent on riparian and wetland habitats, such as bristly sedge, Constance's bittercress, and bulb-bearing water hemlock, would be the most affected.

Impacts from Vegetation – Forests and Woodlands Management

Impacts on special status plants from forests and woodlands management would be similar to those impacts described for terrestrial wildlife in Section 4.2.8.2.2, Impacts from Vegetation - Forest and Woodlands Management.

Impacts from Vegetation – Riparian and Wetland Management

Under all alternatives, actions that would improve riparian and wetland conditions would in turn improve habitats for riparian- and wetland-dependent special status plant species by decreasing erosion, and increasing streambank stabilization and areas of wetland vegetation.

Alternatives A, C, and D have an objective to achieve PFC for 75 percent of the riparian and wetland areas. Alternative B has a PFC objective of only 50 percent. Unlike current management, the action objectives (Alternatives B, C, and D) specify actions for maintaining and improving riparian and wetland areas. Thus the specified objective would be more likely met under the action alternatives.

Impacts from Vegetation – Invasive Species and Noxious Weeds Management

Under all alternatives, actions to prevent and control invasive and noxious weeds using integrated weed management techniques could reduce the area and severity of damage to special status plant habitats by reducing the quantity of invasive species and thus decrease the competition allowing native and special status plants to increase (or at least slow down the decrease). However, weed management techniques could also harm nontarget plant species, including special status plants or common native plants which comprise special status plants habitat. Careful management and monitoring of applications would minimize this potential.

Impacts from Vegetation – Nonforested Management

Under all alternatives, actions to protect or enhance nonforested vegetation would protect and enhance special status species that occur within this vegetation type.

Alternative A: Current management only calls for meeting the Idaho Rangeland Standards and Guidelines. This would require maintenance of existing native plant communities. It would also require nonnative plant species used for restoration to be appropriate for the restoration site. These actions would minimize potential for impacts on special status plants that occur in this vegetation type.

Alternative B: This alternative is a little more specific about preventing tree species invasion (preventing changes in acres of occurrence of nonforested vegetation), but otherwise calls for natural recovery, which would offer the least protection of nonforested vegetation and associated special status plants of any alternative.

Alternatives C and D: These alternatives specify the same action regarding tree invasion as Alternative B. However, these alternatives also require active prevention of off-road motorized vehicle use in nonforested areas, leading to less disturbance of soil and vegetation (to include special status plants), and less opportunity for invasion by invasive species which may reduce occurrences and populations of special status plants. These

alternatives also call for active restoration through seeding, which would enhance the native plant base necessary for special status plants.

Impacts from Fish and Wildlife Management

Implementation of INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) could expand and improve the quality of habitat for riparian-dependent special status plants and potentially could lead to increased viability of these species.

Impacts from Wildland Fire Management

The level of impact from fires occurring in special status plant habitats would depend on whether that species is fire-dependent, the severity of the fire, type of habitat, composition, structure and historic fire regime of the area relative to the historical range of variability, and fire suppression tactics. Special status plant populations could be damaged or destroyed in a severe fire, but in general fire would improve habitat for special status plants in the long term in the majority of cases. Fuel treatments would have effects similar to forested vegetation treatments.

While occurrence of special status plants would be a consideration under any wildland fire management activity, Alternative C specifies wildland fire management actions with emphasis on noncommodity resources such as special status plants. This could provide additional attention to protection of special status plants, as well as help make special status plant enhancement more of a priority for fire management. Alternative D balances emphasis between commodity and noncommodity resources, thus not placing as much emphasis on special status plants as Alternative C.

Impacts from Visual Resources Management

Visual resources management can indirectly impact special status plants through the limitations it places on authorized activities (e.g., road construction, timber harvest, etc.). Only the most restrictive VRM classes, VRM I and II, would have a notable effect. VRM I only occurs in Wilderness Study Areas (WSA) where most management activities that could impact habitat are not allowed. Thus designation of VRM I would have no additional impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Only low levels of change to the landscape are allowed within areas classified as VRM II. Therefore, there would be constraints on activities, especially those involving removal of vegetation, in these areas. This would indirectly reduce the potential for impacts on special status plants.

Impacts from Forestry and Woodland Products Management

Impacts are described under the Impacts from Vegetation – Forests and Woodlands Management section.

Impacts from Livestock Grazing Management

Impacts could include livestock trampling individual plants or disturbing habitats. Special status plants are considered prior to issuing grazing permits, and few allotments exist on public lands in the planning area, so the potential for impacts on special status plants from grazing is very low under any alternative. Alternatives A and B allocate 4,004 acres for livestock grazing. Alternatives C and D only allocate 1,218 acres. Thus, under the latter two alternatives, the potential for impacts from grazing is even less than current management.

Impacts from Minerals Management

Minerals management impacts on special status plants potentially occur from surface disturbance and thus loss of habitat as well as potential destruction of individual plants. Currently (Alternative A) and under

4. Environmental Consequences

Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on special status plants than Alternative C.

Impacts from Recreation Management

Alternative A: Much of the potential impacts from recreation are indirect effects from transportation and travel management and can include accidental destruction of individual special status plants or disturbance of habitat from vehicles. This type of effect is addressed further in the transportation and travel management section. Constructing recreational facilities generally increases use and thus increases the potential for accidental disturbance of special status plants. Travel management restrictions, special designations, and the ESA generally minimize but do not eliminate the potential for these impacts.

Alternative B: More infrastructure and maintenance actions could result in slightly more potential for accidental special status plants impacts than under Alternative C. Potential impacts are described under Alternative A.

Alternative C: Fewer infrastructure and maintenance actions could result in slightly less potential for accidental special status plant impacts than under Alternative B. Potential impacts are described under Alternative A.

Alternative D: Under Alternative D, impacts from recreation actions would be similar to Alternative B. Potential impacts are described under Alternative A.

Impacts from Renewable Energy Management

Impacts from biomass removal are described above under Impacts from Vegetation – Forests and Woodlands Management. There is a small potential that direct damage to special status plants, and destruction of habitat from construction of roads and power lines could occur, if wind energy is developed. Introduction of weeds by vehicles used to remove biomass products or to construct wind energy facilities could impact special status plants. While current management has no objective to provide opportunities for wind energy, the action alternatives (Alternatives B, C, and D) would provide better opportunity to control and mitigate where development and impacts might occur.

Impacts from Transportation and Travel Management

Impacts from travel management on special status plants are generally due to accidental destruction of individual plants or occurrences, and from the introduction of weeds by vehicles, pedestrians, and equestrian use. Off-road motorized vehicle use (except snowmobiles) has the highest potential for these impacts. Under current management, 63,041 acres are open to off-road travel. None of the action alternatives (Alternatives B, C, and D) designate any area as open to off-road travel. Therefore the potential for impacts is greatly reduced.

Impacts from Lands and Realty Management

Impacts on special status species can occur from both land tenure adjustment and ROW and use authorizations. Land tenure impacts on special status plants could occur through loss of habitat and populations from federal ownership and protection. ROW and use authorizations generally involve road or facilities construction or improvements, which can harm special status plants and their habitat. Impacts through acquisition could also benefit special status plants. For example, BLM recently acquired land that contains Constance's bittercress.

Alternative A: Special status species habitat is not a criterion for land retention/acquisition under current management. Therefore, adjustment and exchange could result in loss of important special status plant populations and habitat from public ownership and protection. Current management also does not specify any specific restrictions on ROW authorizations or use permits. Thus related impacts on special status plants could occur anywhere in the planning area.

Alternative B: Land tenure criteria under this alternative would have the same effect as Alternative A. However, Alternative B identifies 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. There would be no potential for related impacts on special status plants to occur in exclusion areas, and the potential would be greatly reduced in avoidance areas. However, these designations would also concentrate authorizations within the remaining 51,548 acres, where there would be an increase in the potential and intensity of impacts.

Alternative C: This alternative identifies special status plant and wildlife habitat and riparian and wetland habitat as criteria for retention/acquisition. This would increase the likelihood of increasing or retaining important habitat in public ownership, more than Alternatives A, B, or C. This alternative also specifies 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. The effect on impacts to special status plants within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the potential and intensity of impacts.

Alternative D: This alternative identifies federally listed special status species habitat as a criterion for acquisition or retention. While this would ensure retention and promote acquisition of special status plant habitat, it would allow for other special status plant species and habitat to be exchanged or otherwise adjusted. This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. The effect on special status plants within these areas would be the same as described for Alternative B, corresponding to the differences in area. Authorizations and impacts would be concentrated on the remaining 67,033 acres.

Impacts from Special Designation Management

Generally special management areas such as ACECs, RNAs, WSAs, and wild and scenic rivers result in protection of special status plants from human activities and long-term improvement or at least maintenance of habitat quality.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. This would provide protection of special status plant populations that occur there. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts on special status plants are already not allowed. Thus, designation of the Lund Creek RNA would not affect special status plants unless the WSA was released by Congress. Indefinite protective management of five stream segments, totaling 28 miles, which are eligible for Wild and Scenic River designation, would include protection of special status plants and other vegetation that occurs within the adjacent lands. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership, and very little ability to influence management. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would be no added protection unless the WSA was released by Congress.

4. Environmental Consequences

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect special status plants as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of special status plants.

Alternative C: This alternative would protect existing special status plants through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded, unless the WSAs were released by Congress. The area outside the WSA includes the Gamlin Lake ACEC, which identifies special status plants as one of the values that designation is intended to protect. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of special status plants. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

4.2.9.3 Cumulative Impacts

Most of the items listed in Table 4.1.3-1, Actions and Events that Contribute to the Cumulative Impact Scenario, have had, or could have in the future, at least indirect effects on special status plants. Invasion of native habitats by invasive species and other exotic species poses one of the greatest threats to native plant species and communities and is an increasing concern within the decision area. Controlling the spread of invasive plants is essential for the conservation of special status plant species; however, indiscriminate or broad scale application of chemical herbicides may also threaten sensitive plant species. Other factors that have affected special status plants and lead to their rarity include:

- Fire suppression;
- Changes in forest species composition and structure;
- Degradation of riparian habitat;
- Logging;
- Livestock grazing;
- Road construction;
- Mineral Development; and
- Recreation.

On private lands large amounts of habitat are lost and will continue to be lost as a result of development from the rapidly increasing population in the planning area (41 percent between 1990 and 2000). This loss coupled with the related increased fragmentation from development will shrink the quantity and quality of available habitats in the planning area, perhaps increasing the importance of public lands including the BLM and USFS. Implementing the RMP, as well as USFS Forest Plan Revisions would put numerous new mitigation, restoration, and conservation measures in place that would likely reduce the potential extent and severity of impacts from other actions. Implementing several programs, such as CNFISH, could combine with similar

programs on USFS lands to rehabilitate damaged lands such as riparian areas. Actions on BLM lands would have a noticeable effect at the local level, but because of the small total area of scattered parcels, the RMP's contribution to cumulative effects on special status plants across northern Idaho is relatively small. The actions of the USFS shape the conditions of much of northern Idaho.

The same types of cumulative effects would occur under all alternatives. Generally, Alternative C would contribute the greatest potential for improvement in special status plant populations, habitat, and potential habitat in northern Idaho because of numerous management actions, mitigation measures, and restrictions. Alternatives A and B would likely contribute less to any improvements in special status plant habitat conditions across northern Idaho due to more of a focus on commodities, especially under Alternative B. Alternative D is generally between alternatives B and C in most regards.

4.2.10 Wildland Fire Management

4.2.10.1 Methods of Analysis

Management actions were analyzed to determine whether they could result in impacts on wildland fire management by causing change to any of the following indicators:

- Fire Regime Condition Class (FRCC)
- Firefighter and public safety
- Reducing threat to WUI

4.2.10.2 Impacts

Impacts from Wildland Fire Management

Wildland fires would continue to occur under all alternatives. Suppression tactics would be similar under each alternative because they emphasize firefighter and public safety and have the same criteria for prioritizing suppression. Wildland fire use may occur under Alternatives B, C, and D, but due to suppression criteria and safety concerns, total acres burned by either wildland fire or wildland fire use would likely be the same for all alternatives. Hazardous fuels treatment levels would differ by alternative. Acres of treatments would correspond with the 15-year estimates for vegetation treatments in the Vegetation - Forest and Woodlands section (Alternative A = 7,000 acres; Alternative B = 9,600 acres; Alternative C = 1,200 acres; and Alternative D = 8,200 acres). Thus, Alt B and D would provide the greatest opportunities to improve FRCC and protect WUI, where as Alt A and C would provide less opportunities.

Alternative A: The MFP lacks specific direction on improving FRCC. Suppression of all wildland fires using appropriate management response would consider values at risk, firefighter safety, and resources available. By BLM policy, firefighter and public safety are important factors in appropriate fire suppression decisions. Full suppression on all fire starts reaching control status within one operational period requires appropriate management response and does not consider the benefit fire may have for resource management or resources at risk in making fire suppression decisions. Thus, fire use would not be an option for improving FRCC.

Alternatives B, C, and D: Implementing appropriate fire suppression actions to protect significant timber and natural resource values would protect values associated with timber and other natural resources but may reduce the potential for use of fire to improve FRCC. Using the AMR process to employ suppression tactics to protect economically valuable resources and assets would focus on suppression, considering available resources and potential outcomes, which would reduce the short-term threat to the WUI, but limit FRCC improvement.. Applying MIST in special designation areas (e.g., WSA, ACEC, and recreation sites) would protect special areas from fire suppression impacts to the extent possible, but may also reduce the potential for use of fire to improve FRCC. Wildland Fire Use (WFU) would improve FRCC in vegetation types where wildland fires typically burned historically with more frequency. Wildland fire use outside the WUI would help to restore vegetation conditions (improve FRCC) in many areas where fire exclusion has caused a change in the vegetative structure and composition. Approximately 52,319 acres would provide opportunities to use WFU for resource benefits, while not damaging WUI-related economically valuable resources or assets. Thus, this would indirectly reduce the threat to the WUI.

Alternatives B and D would improve or protect economically valuable resources through the use of fuels treatment activities. Identifying areas and planning where fuels treatments would improve or protect economically valuable resources and emphasize utilization of small diameter trees would direct treatments to

areas where economically valuable resources could be protected. This focus would reduce the threat of wildland fire within the WUI. Conducting thinning in areas where fuel structure is a concern would reduce the fuel loadings and possibly reduce fire behavior and effects. This may include a reduction of crown fires, smaller fires, and fires that burn less intensely, and lower fires resistance to control efforts. Treatments to reduce the impacts from wildland fire in WUI, municipal watersheds, and infrastructure would reduce the risk of damage from wildland fire in these areas. In the long term, this could result in fewer resources expended on fire suppression in these areas and increase firefighter and public safety.

Alternative C focuses suppression efforts on protecting noncommodity resources and the use of MIST; this alternative would not strive for full suppression on all fire starts. It is possible that overall fire size may be greater in this alternative than other alternatives. However, since criteria for allowing wildland fire use would be the same for all alternatives, and firefighter and public safety are always the top priority, it is likely that most fires would be suppressed under all alternatives and that the effects would be the same. The slight possibility of additional acres burned is not great enough to be reflected in FRCC.

Impacts from Air Quality Management

Actions for meeting air quality standards (which are the same for all alternatives) have been in force since the 1980s, and past experience shows that restrictions on burning to minimize impacts on air quality may affect the prescribed burning program by reducing opportunities to burn in any given year. However, when averaged over the next 15 to 20 years, these reduced opportunities are not expected to have a major effect on the use of prescribed burning. This may prolong the time required to return the FRCC to historic conditions and reduce wildland fire management efficiency, but it would not affect firefighter safety.

Impacts from Vegetation: Forests and Woodlands Management

Under all alternatives, forest vegetation treatments that return stands to historic conditions will contribute to improving the FRCC. Species composition is an FRCC indicator. Thus changing species composition to historic conditions would bring the FRCC closer to historic conditions. Contribution toward improving FRCC would correspond with the number of acres treated. Alternative A would treat 7,000 acres. Compared to Alternative A, Alternative B would increase treatments by 37 percent. Alternative C would reduce treatments by 83 percent, and Alternative D would increase treatments by 17 percent. Due to the small number of acres treated under any of the alternatives, treatments alone are unlikely to be enough to reduce FRCC for any cover type across the CdA FO. Any timber harvesting, followed by effective fuel reduction, would reduce fuel loads in the long term, lowering the risk of large scale and/or high impact stand-replacing wildland fire over time. The focus of efforts under all alternatives would be within the WUI.

Alternative C identifies a much smaller area for treatment than the other alternatives, and it emphasizes the use of natural disturbance. This alternative would continue the progression that has resulted in the current FRCC for dry conifer, wet/cold conifer, and wet/warm conifer, which has resulted from a lack of disturbance, because the proposed treatment acres are not extensive enough to change the conditions. Although some fires would burn within their historic range of intensity, severity, and size, overall FRCC would not be improved by management actions, leaving the area at higher risk for fires burning outside the natural conditions under which the vegetation developed. Douglas-fir would continue to encroach on areas historically dominated by ponderosa pine, creating ladder fuels and increasing the fuel loadings. Forest litter would continue to accumulate on the forest floor, leading to a thick duff layer. As these fuels accumulate, fire behavior becomes more intense and effects are more severe. The dry conifer type historically experienced frequent low-severity fire. Once a wildland fire burns in this type, the dry conifer type would be considered in FRCC 1 for 15 to 35 years. Although some fires could burn within their historic range of intensity, severity

4. Environmental Consequences

and size, overall this alternative could result in less frequent fires burning at higher intensity and severity. Trees that would have been able to withstand the low-intensity, low-severity fires may not be able to withstand the higher-intensity fires due to roots being killed by the increased thickness of the duff layer and ladder fuels allowing fires to burn stems and kill tree crowns. These higher intensity fires would have much greater resistance to control efforts thereby increasing both size and rate of spread which in turn would increase potential danger to firefighters and the public.

Impacts from Vegetation – Nonforested Management

Under the action alternatives, allowing natural recovery (Alternative B), restoring native communities (Alternatives C and D), and preventing tree encroachment (Alternatives B, C, and D) would contribute to improving the FRCC but not enough to lower it to FRCC 1. This action could increase fine fuels and affect fire behavior by allowing more frequent fire ignitions but would lower the intensities of fires to within historic range of variability. If BLM conducts prescribed burns, or allows fire use on nonforested vegetation, the FRCC could be lowered to FRCC 1.

Impacts from Fish and Wildlife Management

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) prohibit the use of some suppression methods in riparian conservation areas. They also require developing strategies that recognize the role fire plays in ecosystems, including riparian ecosystems. In the event that fire would damage the long-term ecosystem function or inland native fish, avoiding the use of these fire suppression methods would not be required. Since riparian conservation areas are generally in fire regime IV, fire occurrence is infrequent and it is not likely that native fish protection would increase FRCC, particularly since fire ecology is to be considered.

Protecting and enhancing riparian and aquatic ecosystems (Alternative A) or high quality aquatic, riparian, and wetland habitats (Alternatives B, C and D) may alter the type of wildland fire management actions that can occur in these areas, mainly the type of suppression, emergency stabilization and rehabilitation (ESR), or fuel reduction that may occur. Overall, management goals for wildland fire management can be achieved while implementing the protection measures for INFISH or CNFISH.

Elk Habitat Guidelines contain some direction on the type, size, and timing of activities in important ranges. These guidelines could influence fire management decisions, particularly related to fuel reduction treatments and post-activity burning or piling in these areas. Goals for wildland fire management would be moderately affected by following the Elk Habitat Guidelines. Wildland fire suppression under all alternatives or wildland fire use under Alternatives B, C, and D would be moderately affected.

Since nearly all of the proposed vegetation treatments are designed to improve FRCC at least to some degree, restrictions and requirements to protect fish and wildlife that limit vegetation treatments under all alternatives, would have a corresponding effect on wildland fire management. Under Alternative D, providing closed canopy old growth for white-tailed deer may prohibit treatment that could improve FRCC in some areas. However, this requirement applies to only 4,337 acres, so wildland fire management goals could still be met. Wildland fire use and prescribed fire are two treatments that may be avoided in white-tailed deer key winter range, depending on site-specific assessment.

All alternatives call for closing roads when no longer needed for their intended purpose, to prevent habitat fragmentation. This would make these roads unavailable for emergency fire response and would reduce access for suppression response or management of ignited fire treatment.

Maintaining adequate habitat for snag- and cavity-dependent animals under all alternatives would be considered in fire planning and may require adjustments to burn plans or vegetation treatments. These types of requirements are common procedure, so this would not be considered an effect on wildland fire management.

Under Alternatives A, B, and D, creating small clear-cuts revegetated with white clover (Alternatives A and B) or native grass and forbs (Alternative D) would reduce heavy fuels. White clover may also burn differently than native plants by reducing spread rates due to high moisture content. White clover is easily killed by fall fires, so in areas where it has replaced native vegetation, additional ESR may be required following wildland fire. Clear-cuts may affect wildland fires in these areas by making them easier to control once the activity fuels are removed to meet the Idaho Forest Practices Act, until the forest is reestablished. Under this alternative, these areas may also be suitable for wildland fire use, if they are not located in the WUI.

Impacts from Special Status Species Management

Under all alternatives, protection of special status species habitat could place constraints on vegetation treatments which would make them less effective at improving FRCC.

Current management is not specific about special status species management direction. However, the action alternatives (Alternatives B, C, and D) provide specific direction by species. Actions to protect bald eagles and cavity-dependent species would alter fire management plans. In a very few instances, protecting snags used by bald eagles may not be possible during fire suppression due to safety concerns. None of these protections would affect FRCC, fire fighter and public safety, or threat to the WUI. Protections for bald eagles would have the same effect as those described under fish and wildlife for the use of CNFISH.

Actions requiring reductions in road access to recover grizzly bears may increase the threat to WUI. Reduced access may make control more difficult and allow fires to become larger and burn more acres (this would affect about 1,660 acres). The resulting large scale fires would have much greater resistance to control efforts and would likely burn into WUI areas due to proximity of the WUI and prevailing wind patterns.

Spalding's catchfly habitat occurs in the dry conifer type. Protection of this species would be considered for appropriate management response, emergency stabilization and rehabilitation, and during preparation of burn plans for prescribed fire. Protection may require some alteration of activities, affecting reduction of threat to WUI areas, but since most activities could still occur, these are not likely to have a significant affect on fire management or fuel reduction goals and would not affect FRCC or firefighter safety.

Impacts from Visual Resources Management

Only the most restrictive VRM classes, VRM I and II, would have a notable effect on fire management. Fire suppression actions such as fire line construction, retardant use (because of its color), and tree and vegetation removal would be avoided in VRM Class I areas, which may affect wildland fire management on 21,714 acres within WSAs across all alternatives. Of these, 993 acres are within the WUI. Visual impact from retardant is, however, a temporary situation and would wash away within less than a season from rain. The entire spectrum of suppression responses will be considered during the wildland fire situation analysis process. In VRM I and II areas, emphasis will be given to MIST tactics, and fire suppression activities such as line construction, retardant use, and vegetation removal *may* be avoided in VRM Class I areas. However, BLM will use whatever suppression tactics necessary for safety and to protect lives, regardless of VRM.

VRM Class II is somewhat restrictive and may require alterations of wildland fire management, particularly fuel reduction and vegetation treatment. These alterations may cause reduced effectiveness of the treatments,

4. Environmental Consequences

which could mean that the FRCC would remain higher. Impacts would correspond with number of acres classified as VRM II (see Table 4.2.10-1 below).

Table 4.2.10-1 Acres of WUI by VRM Class						
	Alternatives A & B		Alternative C		Alternative D	
	In WUI	Total	In WUI	Total	In WUI	Total
Acres of VRM Class I	993	21,714	993	21,714	993	21,714
Acres of VRM Class II	3,039	14,312	13,066	42,273	6,504	23,551

Impacts from Forestry and Woodland Products Management

Silvicultural treatments designed to remove excess trees (e.g., thinnings) and regeneration treatments cause a short-term increase in fuel loading. The short-term impact usually lasts less than two years and is dependent on timing of fuels treatment following completion of the silvicultural treatment. Treatment of fuels resulting from harvesting operations usually mitigates the increased fuel loading and may reduce fuel loading to below pretreatment conditions. Additional treatment of fuels will further decrease post-silvicultural treatment fuel loading to below pretreatment conditions. Fuels reduction treatments using fire will usually have a more immediate effect on reducing fuel loading than those treatments that rely solely on mechanical means because some mechanical treatments can cause a temporary increase in fuel loading (usually less than two years). In the case of precommercial thinnings the temporary increase in fuel loading lasts until the excess material begins rotting and recycling back into the soil (usually in three to five years). The extent of the effects of fuels treatments from each alternative is based on the acreage treated in each alternative, as described above. The extent of these effects would be determined by the number of the acres that would be treated under each alternative, as described in Section 4.2.4, *Impacts from Vegetation – Forests and Woodlands*.

Impacts from Renewable Energy Management

The use of biomass for energy would reduce fuel levels following silvicultural treatments, lowering the potential for fire. Biomass would likely be a byproduct of forest vegetation treatments, and the magnitude of impacts would correspond with the acres to be treated under each alternative, which is described under the Impacts from Vegetation – Forests and Woodlands.

Impacts from Transportation and Travel Management

Since all alternatives make exceptions for motorized use closures for fire suppression and emergency vehicle access, travel management would not directly affect threat to WUI by increasing response time. However, when motorized access is prohibited or limited, undesignated roads would not be maintained and may become overgrown with vegetation, blocked by fallen trees, or impassible due to cutbank, fillslope, or stream crossing failure. Extended response times can have negative impacts on efforts to reduce wildland fire threat to WUI areas and firefighter and public safety. However, the incidence of human-caused ignitions would be reduced in areas closed to motorized use. These impacts would correspond with the area designated closed, the area designated open, and the miles of designated trails under each alternative, as depicted in Table 4.2.10-2 below.

Table 4.2.10-2 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,549 ac	96,139ac
Designated Roads and Trails	27 mi	282 mi	122 mi	175 mi

4.2.10.3 Cumulative Effects

Effects on wildland fire management due to any of the alternatives is overshadowed by reasonably foreseeable uncharacteristic fire, continued fire suppression made necessary by WUI and intermingled landownership, and large scale insect infestations and disease outbreaks that would continue for the planning period.

Effects on wildland fire management, including FRCC and firefighter and public safety due to management accomplished by other landowners may affect wildland fire management on public lands. When activity fuels are not treated adequately, fuel hazard could increase on adjacent lands which could affect fire intensity and severity on public lands. When adjacent owners treat fuels or implement fire mitigation plans in the WUI, fires are easier to suppress and firefighter safety is increased.

Revision of the Idaho Panhandle National Forest Plan could result in more or less treatment of adjacent areas, although, because no decision has been made, the effects are not known. Wildland fire management on US Forest Service lands will be determined in the plan decision, particularly areas where wildland fire use may occur. BLM would need to coordinate with USFS on all wildland fire use actions and events. Wildland fire use on US Forest Service lands could affect FRCC on BLM lands.

Additionally, a decision to increase the level of wildland fire use or prescribed fire, along with agricultural field burning could impact the BLM's ability to use wildland fire and prescribed fire due to air quality concerns and meeting the air quality requirements. This could postpone or eliminate fuel reductions or treatments to improve FRCC.

Root rot has and will continue to cause mortality in Douglas-fir and grand fir. When areas heavily infected with root rot are harvested, root rot disease often spreads to the residual Douglas-fir, grand fir, and any true firs. Insect infestations could be exacerbated by inappropriate management, which could affect public lands. Additionally, a lack of appropriate treatment or lack of wildfire suppression or fuel reduction treatments could cause more mortality on public lands when wildland fire or insects spread. High mortality could increase FRCC.

Human population increases and subsequent development are likely to expand the WUI, which in turn could alter forest management, taking the emphasis off restoring historic composition and structure and focusing more on fuel reduction (albeit, these are sometime the same thing).

Access is a critical component of wildland fire suppression. A trend toward reducing access to public lands is due to adjacent landowners gating or closing roads, which could hamper wildland fire suppression efforts and pose a risk to public and firefighter safety. Reducing access would also increase the potential for larger fires to occur due to an increase in time needed to access the fire and control it. Time needed to move in crews would be extended, and the ability to effectively apply and place resources (e.g., engines, water tenders, etc.) would be limited.

4. Environmental Consequences

Effects of management for federally listed (current and future) and other special status species affects wildland fire management, not only for BLM (as described previously), but also affects management on adjacent state lands and National Forest. The resulting decrease in effectiveness of treatments to improve FRCC and reduce threat to the WUI, and the potential increased risk to firefighter and public safety will affect all areas of state and federal lands where habitat for these species occurs.

4.2.11 Cultural Resources

4.2.11.1 Methods of Analysis

Impacts on cultural resources occur when there is damage or loss of these resources. The primary indicator for determining if an impact would occur is the effects on National Register of Historic Places (NRHP) eligible cultural resources or areas of importance to Native American or other traditional communities. Specific indicators include the following:

- Acres and relative depth of ground-disturbing activities permitted and their potential for affecting known or unknown cultural resources or areas of importance to Native American or other traditional communities;
- Increased access to or activity in areas where resources are present or anticipated;
- The extent to which an action changes the potential for erosion or other natural process that could affect cultural resources;
- The extent to which an action alters the setting (such as visual and audio factors) of cultural resources; and
- The extent to which an action alters the availability of cultural resources for appropriate uses.

Impacts on cultural resources are assessed by applying the criteria of adverse effect as defined in 36 CFR 800.5a: “An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places (NRHP) in a manner that would diminish the integrity of the property’s location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative.” The criteria of adverse effect provide a general framework for identifying and determining the context and intensity of potential impacts on other categories of cultural resources as well, if these are present. Assessment of effects involving Native American or other traditional community, cultural, or religious practices or resources also requires focused consultation with the affected group.

The following assumptions regarding the resource base and management practices were made in the analysis:

- Most of the planning area has not been inventoried for cultural resources. There is potential for cultural resource occurrence in unsurveyed areas, but the presence and significance of resources and impacts cannot be quantified. Recorded cultural resources are primarily from the historic era.
- Traditional cultural properties (TCPs) are places associated with the cultural practices or beliefs of a living community. These cultural resource sites are rooted in the community’s history and are important in maintaining cultural identity. Contemporary Native American groups, such as the Coeur d’Alene, Kootenai, Confederated Salish and Kootenai, and Kalispel Tribes, maintain social and cultural ties to the land and resources of the planning area. These cultural resources are generally not known or discussed outside of the affected community but may be present in the planning area. Impacts on broader tribal interests in the natural resources of the planning area and the exercise of tribal treaty rights are discussed in Section 4.5.3, Native American Tribal Uses.
- Impacts would be minimized or avoided by compliance with laws and executive orders designed to preserve and protect cultural resources. These include FLPMA Sections 103(c), 201(a), 202(c), the

4. Environmental Consequences

Antiquities Act of 1906, the National Historic Preservation Act (NHPA) Sections 106 and 110(a), the Archaeological Resources Protection Act (ARPA) Section 14(a), the Native American Grave Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), and Executive Orders 13175 and 13007.

4.2.11.2 Impacts

Impacts from Cultural Resources Management

Management measures would preserve and protect cultural resources and help ensure that they are available for appropriate uses. Impacts from proposed land use authorizations would be minimized or avoided by complying with laws and executive orders designed to preserve and protect cultural resources. Complying with management measures for authorized actions requires consulting with federally recognized tribes and other interested parties, identifying and evaluating cultural resources, and adhering to procedures for resolving any adverse effects and mitigating impacts. Inventories would help avoid and mitigate impacts from authorized actions.

Under the Action Alternatives (B, C, and D) all cultural resources would be allocated to one or more use categories. The NHPA and other cultural resource requirements would still be applicable, but the categorization of resource use provides a proactive planning mechanism for preserving and protecting significant cultural resources and ensuring that they are available for appropriate uses by present and future generations.

Additional actions under Alternatives B, C, and D would enhance the current management of cultural resources by adding proactive research and inventories to record segments of the Mullan Trail, by scheduling and setting goals for resource monitoring, cultural resource record updating and by preparing cultural resource management plans for the Rochat Divide area and the Liberal King mine.

Impacts from Soils Management

Measures to limit soil erosion and ground-disturbing activities under all alternatives would enhance the preservation of archaeological resources in the long term.

Impacts from Water Resources Management

Actions to restore watersheds and improve water quality may risk direct disturbance of cultural resources through ground-disturbing activities or temporary loss of access to TCPs. Watershed improvements that reduce erosion would enhance site preservation. The action alternatives (Alternatives B, C, and D) place more emphasis and provide more direction for watershed improvements, which would increase the potential for related impacts.

Impacts from Vegetation (All Types) Management

Under all of the alternatives, there would be long-term effects associated with enhancing culturally significant plant and animal habitat and eroding archaeological sites. There could be short-term impacts due to loss of access during treatment or closures for cultural uses. There could be long-term impacts due to ground disturbance associated with treatments or the effects of chemicals. Impacts would likely correspond with area treated or protected under each alternative. Alternative A calls for forest vegetation treatments on 7,000 acres for these purposes. Alternative B would increase treatments by 37 percent. Alternative C calls for an 83 percent reduction, while D calls for a 17 percent increase.

All alternatives establish a PFC objective (75 percent for A, C, and D; 50 percent for Alternative B) for the riparian and wetland areas, and call for maintaining desirable plant communities, and preventing and controlling invasive species. These actions in the long term may reduce erosion of archaeological sites and the risk to cultural resources from wildland fire.

Alternatives C and D would prevent off-road motorized use and access for the purpose of maintaining desired plant communities in nonforested areas, which would also reduce the risk to cultural resources from direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access, leading to vandalism and unauthorized collecting.

Impacts from Fish and Wildlife Management

Under all alternatives, there would be long-term indirect effects associated with enhancement of culturally significant plant and animal habitat, as well as short-term effects due to loss of access and alterations of setting during treatment or seasonal closures. Closing roads and establishing riparian buffers could indirectly reduce the potential for direct disturbance of cultural resources and access, thus reducing vandalism and unauthorized collecting.

Alternative B: Under Alternative B there is an additional emphasis on measures to promote commodity and recreational species. These include species that have been fished or hunted traditionally, and these actions would enhance opportunities to continue cultural use. Increased recreational use can be associated with repetitive ground-disturbing activities and the potential for disturbance of cultural resources, especially archaeological sites.

Alternative C: Alternative C emphasizes using minimal management and human intervention to achieve better habitat conditions and would not promote commodity and recreational uses. Cultural resources would generally be subject to less risk of disturbance under Alternative C from treatments or commodity uses.

Alternative D: Alternative D includes more treatment, human intervention, and management to improve fish and wildlife habitat than under Alternative C and less than under Alternative B. Cultural resources would generally be subject to more risk of disturbance than under Alternatives A and C but less than under Alternative B from this proposed level of activity.

Impacts from Special Status Species Management

Under all alternatives, measures that reduce incompatible uses to preserve special status species habitats would also have indirect effects on cultural resources by reducing the potential for ground-disturbing actions, erosion, alterations to setting, and vandalism. Short-term impacts could result if tribal access is not allowed to traditional use areas. The actions alternatives (Alternatives B, C, and D) have additional measures to protect special species habitats that would indirectly benefit the preservation of cultural resources, while potentially reducing access to any TCPs present.

Impacts from Wildland Fire Management

Under all of the alternatives there would be long- and short-term impacts on cultural resources. Treatment is associated with potential impacts on cultural resources but in the long term could decrease the risk of impacts on cultural resources from large scale and/or high impact stand replacing wildland fire and subsequent erosion.

Wildland fire can disturb cultural resources through the destruction or modification of structures, features, and artifacts. Organic materials and the information that can be obtained from their study are especially

4. Environmental Consequences

vulnerable to heat damage. Fire management and suppression activities can involve ground-disturbing activities that can also directly affect cultural resources, especially by altering the spatial relationships of archaeological sites. Fire can result in impacts through erosion and the increased visibility of cultural resources. Fire can remove vegetation and expose previously undiscovered resources, allowing their study and protection; however, sites exposed by fire or flagged for fire avoidance in prescribed fire can be susceptible to vandalism and unauthorized collection.

Alternatives B, C, and D: There are additional measures to protect or avoid known cultural resources in planning fire response and suppression. Wildland fire use would be allowed on up to 52,319 acres, increasing potential for fire-related damage to cultural resources. Fuel treatments discussed under Impacts from Vegetation management would be added, and the design of these actions and events would include consideration of impacts on cultural resources.

Impacts from Visual Resources Management

Visual intrusion on the setting of cultural resources must be considered in the Section 106 process and tribal consultation, regardless of VRM designation. VRM Class I and II designations provide indirect protection for cultural resources where visual setting contributes to the significance of the property or the traditional use. Risk of impacts on cultural resources in VRM Class I and II areas would also be indirectly reduced by limitations on surface-disturbing activities in these areas. VRM I only occurs in WSAs where most management activities are not allowed. Thus designation of VRM I would have no real impact. Total area classified as VRM II varies among the alternatives: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). Magnitude of impact would likely correspond with the area designated.

Impacts from Forestry and Woodland Products Management

Impacts from Forestry and Woodland Products Management are described under Impacts from Vegetation (All Types) Management.

Impacts from Livestock Grazing Management

Livestock grazing, watering locations, corrals, water haul roads, pipelines, and fences can have effects on cultural resources through direct disturbance and erosion. Actions that improve rangeland management could reduce the potential for impacts from direct disturbance and erosion. Since there are only 4,004 acres allocated to livestock grazing under Alternatives A and B, there would be little potential for these impacts to occur. There would be even less potential under Alternatives C and D, which allocate only 1,218 acres to livestock grazing.

Impacts from Minerals Management

Potential impacts of mineral and energy development on cultural resources include direct ground-disturbing activities, erosion, intrusions to setting, and access, leading to vandalism and unauthorized collection. Mineral and energy development includes stipulations to protect resources, and impacts would be considered in the Section 106 process in consultation with tribal governments. Alternatives A and B would allow the most opportunities for mineral developments and impacts, since only 5,376 acres would be withdrawn from mining. Alternative C proposes an additional 24,370 acres to be withdrawn, while Alternative D identifies only 27 more acres than current management for withdrawal.

Impacts from Recreation Management

Recreational use can affect cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to vandalism and unauthorized collecting. Generally, impacts will be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on cultural resources more than any other alternative.

Impacts from Transportation and Travel Management

Open motorized vehicle use can affect cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access, leading to unauthorized collection or vandalism. Transportation access can facilitate access to any TCPs but can also increase risk of impacts on resources. Restricting vehicle use to designated routes would reduce the risk of disturbance of cultural resources located off of travel routes. Therefore, Alternative A would have the greatest potential for impacts due to the area open to off-road motorized travel (see Table 4.2.11-1 below). Alternative B poses the second greatest risk due to the miles of designated road, and conversely Alternative C poses the least. The small variation in area closed to motorized travel does not make a notable difference in potential for impacts.

Table 4.2.11-1 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,549 ac	96,139ac
Designated Roads and Trails	27 mi	282 mi	122 mi	175 mi

Impacts from Lands and Realty Management

Criteria and priorities for land tenure adjustments under Alternatives C and D include consideration of significant cultural resources and areas of importance to Native American communities, not listed under Alternatives A and B. The acquisition of new land would provide long-term federal protection to any cultural resources included in the transaction and could enhance currently managed resources by consolidating holdings. Transfer of public lands to nonfederal entities would permanently remove federal protections for significant cultural resources. Removing federal protections is an adverse effect under the NHPA, which would be addressed and resolved in the Section 106 process prior to adjustment. If land tenure adjustments increase public access, there could be increased risk of vandalism or unauthorized collection of cultural resources, but this could also facilitate cultural use of TCPs.

Designating ROW corridors, exclusion zones, and avoidance zones can limit uses that may be incompatible with the preservation of cultural resources.

Alternative A: Current management does not specify any specific restrictions on ROW authorizations or land use permits. Thus related impacts could occur anywhere in the planning area unless restricted by other management direction.

Alternative B: This alternative would involve 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations

4. Environmental Consequences

would only be allowed when there was no other practical location. There would be no potential for related impacts on cultural resources to occur in exclusion areas, and the potential would be greatly reduced in avoidance areas. However, these designations would also concentrate authorizations within the remaining 51,548 acres, which could increase the intensity of localized impacts.

Alternative C: This alternative would involve 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. The impacts within these areas would be the same as described for Alternative B, corresponding to the differences in area. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres, with a corresponding increase in the intensity of localized impacts.

Alternative D: This alternative would involve 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas. The impacts within these areas would be the same as described for Alternative B, corresponding to the slight differences in area. Authorizations would be concentrated on the remaining 67,033 acres.

Impacts from Special Designations Management

Special designations and area-specific management plans, for those that are related to preservation of cultural resources, provide long-term protection of cultural resources by restricting incompatible uses. Special designations that would restrict surface disturbance or other disruptive activities would indirectly provide protection to cultural resources. Designations that encourage recreation can increase human use and direct disturbance of cultural resources.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Cultural resources would be indirectly protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where most activities that could cause impacts on cultural are already not allowed. Thus, designation of the Lund Creek RNA would not affect impacts on cultural resources, unless the WSA was released by Congress. Indefinite protective management of five stream segments, totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation would similarly protect cultural resources. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer), and very little ability to influence the buffer. Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments would add little to protection cultural resources, unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect cultural resources, as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of cultural resources.

Alternative C: This alternative would protect cultural resources through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded, unless the WSAs were released by Congress. Of the new ACECs, two would be designated specifically to protect known cultural resource values. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. Only one of the new areas would be designated to protect cultural values. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

Impacts from Socioeconomics and Environmental Justice Management

All alternatives include provisions to consult with tribal groups, to improve natural and cultural resource conditions, and to identify, enhance, and facilitate cultural uses of significant plants, animals, fish, and important habitats. Recognition and inclusion of tribal knowledge and concerns with cultural resources and traditional uses would enhance the management of resources in the long term. Some use locations may be TCPs and need to be considered in the Section 106 process.

Safety considerations and hazard reduction may require removing historic structures and features and can involve ground and other disturbances. The impacts of hazard reduction and removal actions would be addressed in the Section 106 process and adverse effects resolved. AML inventory and collection of history information contributes to understanding the cultural resources present.

4.2.11.3 Cumulative Effects

Other past, present, and reasonably foreseeable actions that are relevant to cultural resources in the cumulative impact area include land tenure changes, wildland fire and wildland fire use and suppression, fuel and vegetation treatments including prescribed fire, timber harvest, mineral and energy development, population growth, urban development, growth in recreational uses, OHV use, closed access, restoration activities, regional planning efforts, vandalism and unauthorized collecting at cultural sites, and recognition and assertion of tribal rights and traditional uses. The types of impacts that have occurred and would continue to occur include destruction of cultural resources, loss of integrity due to physical or other disturbances, loss of setting, the effects of natural processes such as erosion and weathering, incremental disturbance from use or access, loss of access to traditional cultural properties, and impacts from vandalism and unauthorized collection.

Past land disposals to nonfederal entities have resulted in the loss of federal cultural resource protection on these lands. Up to 24,930 acres would be considered for future land tenure adjustments under the RMP. Although cultural resource values are considered in the acquisition and disposal of lands, some resources have likely not been identified prior to disposal and impacts have likely occurred. In cases where resources are identified, mitigations to resolve adverse effects can preclude other desirable management options.

Increased frequency of wildland fire in the cumulative impact area, wildland fire use and suppression are associated with surface and other disturbances to cultural resources. Fuel and vegetation treatments including prescribed fire treatment, timber harvest, and ecosystem restoration actions planned regionally are associated with impacts on cultural resources due to ground disturbance, the effects of chemicals and fire, and potential loss of access to TCPs. Actions proposed in the RMP for wildland fire range from full suppression to allowing wildland fire use on up to 52,319 acres. Under the RMP up to 9,600 treatment acres would be added. Stipulations for fire management, vegetation treatments and restoration actions address a range of cultural resource concerns. Impacts would be assessed and avoided, but identification of all resources is not possible and some effects cannot be avoided. In the long-term these actions would be expected to reduce direct impacts on cultural resources resulting from frequent and intense wildland fire.

Population growth, construction associated with urban development, access changes, and growth in recreation have impacted cultural resources through loss or disturbance of resources that are not protected, changes in

4. Environmental Consequences

setting, pressure from incremental use, loss of access to TCPs and in access leading to vandalism of cultural resources. Historic properties adjacent to areas of growth and development would be most susceptible to future impacts. As with other regional plans, areas where open OHV use is allowed would be further restricted under all of the alternatives except Alternative A. Designating routes can protect cultural resources located off the routes, but restrictions are difficult to enforce, especially as population and recreational use grows and other areas are closed.

There are ongoing actions by Native American groups to assert tribal rights and traditional uses throughout the region. The RMP recognizes that tribal knowledge contributes to the management of cultural resources and that traditional use areas or sacred sites are TCPs that are protected cultural resources.

Actions related to grazing, energy and mineral development have had an effect in the past on cultural resources. Current and future activities regionally and in the planning area do not anticipate major actions that could impact cultural resources. Historic mining structures are likely to be removed as part of AML activities for safety and to improve watersheds.

For actions that could affect cultural resources on federal land or actions that are funded, licensed, or permitted by the federal government, compliance is required with the NHPA and other laws, statutes, and regulations. Consideration of the effects of undertakings on protected cultural resources would be required and any adverse effects resolved. For many types of cultural resources, information on the regional cultural resource base is not available and needs to be developed to properly assess the significance of the resource base. State agency actions using federal funds or needing a federal permit require cultural resource review. Impacts on cultural resources would be avoided or mitigated in many of the regional actions. Some impacts would be unavoidable. Measures are in place to identify threats to resources and to prioritize management actions, but some impacts on known or unknown cultural resources resulting from activities such as natural processes, wildland fire, grazing, dispersed recreation, OHV use, and vandalism can go unnoticed and may not be mitigated. Mitigation could preclude other desirable management options and future uses. Development or actions on lands that are not protected by federal or other cultural resource statutes and regulatory protections could lead to loss of these resources and the regional heritage and knowledge that they contain.

Cumulative effects would be similar among the alternatives. Alternative A would contribute more to regional cumulative effects as a result of open OHV use and wildland fire suppression. Alternatives B, C, and D provide more management measures than Alternative A that would directly or indirectly reduce the potential for impacts. The emphasis in Alternative C on actions that value resource conservation, protection and minimal human intervention would have the least impact or risk of impacts on cultural resources and would contribute the least to cumulative impacts.

4.2.12 Visual Resources

4.2.12.1 Methods of Analysis

Management objectives and actions could result in impacts on visual resources if any management actions were to directly or indirectly change the quality of viewsheds available. While visual quality may change on the local scale, none of the alternatives would result in a change in VRM class, due to the small scale of potential actions and the small landbase affected.

4.2.12.2 Impacts

Impacts from Visual Resources Management

VRM classifications affect visual resources by placing limitations on the visual impacts that are allowed to occur. VRM Class I allows only very low changes to the landscape that do not attract attention. This designation applies only to WSAs where no notable changes to visual quality would be permitted. Actions within areas designated VRM II would be allowed only to make small changes to the landscape that could be seen but do not attract attention of the casual observer. Thus only minor changes to visual quality would be allowed in these areas. In areas designated VRM Class III, moderate changes to the landscape would be allowed that may attract attention but do not dominate the landscape. Thus, more VRM III and IV area results in more potential for impacts on visual quality. Conversely, more VRM II-designated area reduces the potential for impacts. VRM I area is the same for all alternatives (see Table 4.2.12-1 below). Alternative C designates the greatest amount of VRM II and would have the least potential for changes to visual quality. Alternatives A and B have the most VRM III and IV and would have the greatest potential for changes to visual quality.

Table 4.2.12-1 VRM Class Designation Area by Alternative			
VRM Classification	Alternatives A and B (acres)	Alternative C (acres)	Alternative D (acres)
VRM I	21,714	21,714	21,714
VRM II	14,312	42,273	23,551
VRM III	33,259	31,429	50,152
VRM IV	27,480	1,350	1,350

Impacts from Air Quality Management

Under all alternatives, the BLM would continue pursuing objectives to minimize degradation of the air shed, to cooperate with other members of the Montana/Idaho Airshed Group, and to ensure activities meet federal and Idaho DEQ air quality standards and regulatory requirements. This would continue to promote visually clear skies over public lands.

Impacts from Water Resources Management

Under all alternatives, the BLM would continue to protect and maintain watersheds so that they appropriately capture, retain, and release water that meets or exceeds state and federal water quality standards. This objective would promote clean water in streams and lakes, resulting in visually clear aquatic landscapes.

Impacts from Vegetation – Forests and Woodlands Management

The primary impacts on visual quality from forest vegetation treatments would be from vegetation removal, smoke and dead vegetation from prescribed fire, and road construction. Impacts would correspond with the number of acres treated. Alternative A calls for treating 7,000 acres. Alternative B would increase treatments

4. Environmental Consequences

by 37 percent. Alternative C would result in an 83 percent reduction, while D would increase 17 percent. Thus Alternative C would cause the least, and Alternative B would cause the most impacts on visual quality. Impacts would primarily occur in VRM III and IV areas, since only minor impacts would be allowed in VRM II areas, and no treatments are allowed in WSA/VRM I areas.

Impacts from Wildland Fire Management

Under all alternatives, the BLM would stabilize and prevent degradation to natural and cultural resources minimize threats to life or property resulting from the effect of fire, and repair/replace/construct physical improvements necessary to prevent degradation of land or resources. The BLM would repair or improve fire-damaged lands unlikely to recover naturally (due to nonnative invasive plants and/or other site-specific situations), repair or replace minor facilities damaged by fire, and, when needed, implement rehabilitation activities as soon as possible and complete these activities within three years after a wildfire. This would continue to protect visual resources by minimizing the extent and severity of wildfire impacts on the natural landscape and enhance visual resources by rehabilitating landscapes damaged by wildland fires. However, it would also continue to damage visual resources because the use of fire lines and retardant would cause noticeable changes to the natural environment. Impacts from the use of fire retardants would only be temporary due to the amount of rainfall and vegetation cover types in the planning area.

Effects on visual resources from conducting treatments in WUI areas would be similar under all alternatives. Fuels treatment could include, for example, thinning and prescribed burns, which would remove vegetation. However, it would also protect visual resources by reducing the extent and severity of a potential uncontrolled wildland fire by removing fuels that support wildland fires. The action alternatives (Alternatives B, C, and D) would allow consideration of fire use on 52,319 acres. This could result in major changes to the visual landscape from allowing fire to burn.

Impacts from Forestry and Woodland Products Management

Impacts are described under Impacts from Vegetation – Forest and Woodlands Management.

Impacts from Minerals Management

New structures, roads, and operations associated with mineral developments would result in long-term impacts on visual resources. Alternatives A and B would allow the most opportunities for mineral developments and impacts, since only 5,376 acres would be withdrawn from mining. Alternative C proposes an additional 24,370 acres to be withdrawn, while Alternative D identifies only 27 more acres than current management for withdrawal.

Impacts from Recreation Management

Impacts on visual quality from recreational use include removal of vegetation and exposure of soils. Generally, impacts will be less in SRMAs than in the ERMA. Thus potential for impacts would correspond inversely to the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts on visual quality more than any other alternative.

Impacts from Transportation and Travel Management

Off-road motorized vehicle travel (except snowmobiles) can greatly impact visual quality through destruction of vegetation and creation of new roads and trails. Only Alternative A allows off-road travel. Travel designations under the other alternatives would not allow these impacts to occur.

Impacts from Lands and Realty Management

Rights-of-way and use authorizations are generally for road construction, maintenance and use, or for development of facilities. These actions could degrade visual quality. Such authorization and actions would not occur within ROW exclusion areas, and would only be allowed within avoidance areas when there is no other practical location. Since no impacts would be allowed in VRM I areas, and only minimal would be allowed in VRM II areas, impacts from ROW and use authorizations would primarily occur within VRM III and IV areas. The potential for impacts to occur would correspond with the amount of VRM III and IV area that is not within an exclusion or avoidance areas. Under Alternatives B and C, VRM II areas would be designated ROW avoidance areas; under Alternative D, they would not. However, since any ROW activity within VRM II areas would have to meet VRM II standards, the effect of not designating these as avoidance areas would be minimal (see Table 4.2.12-2 below).

Table 4.2.12-2 VRM III and IV Area Outside of Avoidance and Exclusion Areas

	Alt. A	Alt. B	Alt. C	Alt. D
VRM III & IV (acres)	60,739*	73,157	50,819	83,631

*This is the total VRM III and IV area since Alternative A has no avoidance or exclusion areas.

Impacts from Special Designations Management

ACEC designations could help to protect scenic quality either indirectly by limiting uses, or directly if scenic values are specifically identified for protection. Protective management of stream segments found eligible or suitable for Wild and Scenic River designation could provide similar indirect protection, or directly in the case of scenic stream segments.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Visual quality would be protected within these areas as a result. Lund Creek RNA falls completely within the Grandmother Mountain WSA, and VRM I area. Thus, designation of the Lund Creek RNA would not affect visual quality, unless the WSA was released by Congress. Indefinite protective management would be provided for five stream segments, totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation. This includes 0.38 mile of Lost Lake Creek which is eligible for scenic designation. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer), and very little ability to influence visual quality. Of the remaining protected segments, all but about 1.5 miles fall within the Grandmother Mountain WSA, so there would be no real added protection, unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect visual quality as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection for visual quality.

Alternative C: This alternative would protect visual quality through designation of 19 additional ACECs, totaling an additional 23,275 acres. About 21,245 acres of the additional area is within the Rochat Divide and Little North Fork of the Clearwater, both of which would be designated for scenic values. However, 18,065 acres of these two ACECs is also within the Crystal Lake and Grandmother Mountain WSAs, and has VRM I

4. Environmental Consequences

designation. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs/VRM I) compared to current management. These designations would afford a corresponding slight increase in protection of visual quality. No ACECs are proposed for scenic values under this alternative. Wild and Scenic River segment protection is identical to Alternatives A and C, with four suitable and one eligible segments.

Impacts from Social and Economic Management

Health and Safety. The BLM would correct physical safety hazards and clean up hazardous materials sites on public lands. The BLM would continue to manage and clean up contaminated public lands in the Coeur d'Alene Basin and in parts of the expanded Bunker Hill/Coeur d'Alene Basin Superfund Site listing. There would be no change in the cleanup of contaminated land, so there would be no new effects.

4.2.12.3 Cumulative Effects

A variety of events on BLM and adjacent lands affect visual resources. Events affecting visual resources that have occurred, are occurring, and will occur include timber harvesting, power lines and other cleared ROWs, wildland fires, wildland fire suppression, mining, motorized vehicle use, noxious weed invasion, urban sprawl, and road construction. Some of the events, such as wildland fires, cannot be entirely prevented by the BLM; the BLM has a greater control over other activities, such as mining and motorized vehicle use. In some instances, the BLM must work in cooperation with cities and counties to address some issues, such as urban sprawl. Urban sprawl results in the public living closer to public lands and, in turn, creates challenges to managing visual resources on public lands immediately adjacent to urban areas. It is assumed that the BLM would continue to work cooperatively with others and manage the land in the best interest of the public, thereby continuing to protect the visual resources on public land with the aid of VRM class designations and the visual resources contrast rating stage. It is also assumed that the BLM would update its VRM class designations, if necessary.

4.3 RESOURCE USES

4.3.1 Forestry and Woodland Products

4.3.1.1 Methods of Analysis

Types of management objectives and actions proposed for different resources, including Forest/Woodland vegetation, could both directly and indirectly impact forest/woodland product management, through changes in quantity and availability of these products. Changes could be indicated by:

- Acres available for production of forest products;
- Availability of forest products
- Ability of public lands to meet current and future (trends) demands for forest products (saw logs, small wood, hog fuel, etc.); and
- Forest products sold (measured in board feet) does not exceed anticipated growth over the planning period (15 years).

4.3.1.2 Impacts

Impacts from Forestry and Woodland Products Management

The ASQ for Alternative A was adjusted from that specified in the MFP, due to the reduction in BLM-administered lands in the planning area and the number of acres proposed for treatment. The PSQs are derived directly from the number of acres to be treated under the Vegetation – Forests and Woodlands sections of the alternatives. Impacts are addressed in the Impacts from Vegetation – Forests and Woodlands Management section below.

Areas identified with special management objectives and areas where harvesting would not be allowed are summations of the objectives and limitations from other resource and resource use objectives and action in the alternatives. Impacts from these limitations and restrictions are addressed in the applicable “Impacts from...” sections.

Impacts from Vegetation – Forests and Woodlands Management

Types of vegetation and forest fuel treatments and acres to be treated would affect the type(s) and quantity of forest products that would be made available. The types of forest products that could come from public lands are saw logs, hew wood, ton wood, and hog fuel. Hew wood is generally small saw logs ranging in size from 4” to 9” in diameter at the small end. Ton wood often consists of material that cannot make quality saw logs or hew wood but can be turned into chips used to make pulp for paper products. However, sometimes during a weak hew wood and saw log market, lower quality saw logs are bought by mills as ton wood. Hog fuel is most commonly waste products left over from saw mills and hew wood mills that cannot be used to make pulp for paper products but can be burned to run cogeneration plants and boilers. Most recently, hog fuel includes other biomass and waste products that can be used to fuel cogeneration plants and boilers, such as for heating schools in lieu of natural gas, electricity, or oil.

Saw logs will comprise the largest portion of forest products removed from public lands, followed by hew wood.

The contribution of ton wood coming from treated lands will be dependent on the need for chips, hew wood, and/or hog fuel. Depending on the price for electricity from conventional sources and/or natural gas, the hog

4. Environmental Consequences

fuel market may or may not be able to make use of such products from public lands. Due to the costs associated with moving such material to a loading point, it is anticipated that little effort will be made to bring such material to a loading point. Most material that would be available most likely will be a result of waste products left at the landing when logging saw logs and hew wood. Transportation costs also will limit use of such material to nearby mills, plants, and other users (e.g., schools). It is anticipated that such material probably should be within 30 to 40 miles of the mill or plant that will use it. The anticipated amount of such material to be removed during the next 15 years will be small and most likely will be comprised of waste material accumulated at landings from logging operations.

Fuel wood (firewood) will continue to be removed. Most generally, firewood comes from removal of dead trees within reach of roads or from cull logs left at landings after completion of logging operations. Most common users are private homeowners. Historically 15 to 20 firewood permits have been sold annually.

Alternative A: Currently, the ASQ is approximately 3,700 MBF annually, which would be harvested from approximately 7,000 acres (approximately 8 percent of the forest area within the CdA FO). These forest products would come from three forest vegetation cover types (Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer). Approximately 56 MMBF would be harvested over 15 years. This represents 12 percent of the anticipated growth over these three cover types (82,556 acres) during this period, or 17 percent of the anticipated growth from the non-withdrawn acres (56,465 acres). If the ASQ is not met after treatment of 7000 acres, BLM would have to treat more acres to meet this volume commitment.

Alternative B: This alternative treats the greatest acreage and therefore produces the greatest quantity of forest products, with a PSQ of approximately 5100 MBF annually; this would be harvested from approximately 9,600 acres (approximately 11 percent of the forested area within the CdA FO) and is an increase of 37 percent over Alternative A. These forest products would come from three forest vegetation cover types (Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer). Approximately 77 MMBF would be harvested over 15 years. This represents 16 percent of the anticipated growth over these three cover types (82,556 acres) during this period, or 23 percent of the anticipated growth from the non-withdrawn acres (56,465 acres).

Alternative C: This alternative treats the least amount of acreage and therefore produces the least quantity of forest products, with a PSQ of approximately 880 MBF annually; this would be harvested from approximately 1,200 acres (approximately 1 percent of the forested area within the CdA FO) and is a decrease of 83 percent from Alternative A. These forest products would come from three forest vegetation cover types (Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer). Approximately 13 MMBF would be harvested over 15 years. This represents 3 percent of the anticipated growth over these three cover types (82,556 acres) during this period, or 4 percent of the anticipated growth from the non-withdrawn acres (56,453 acres). Because this alternative relies more on disturbances, such as fire or insects, to determine where treatments will occur, it is estimated that the quantity of forest products produced per acre will be greatest (11 MBF/acre versus approximately 8 MBF/acre under Alternative A, B, and D).

Alternative D: Under this alternative, the PSQ would be approximately 4,400 MBF, which would be harvested from approximately 8,200 acres (approximately 10 percent of the CdA FO area); this is an increase of 17 percent over Alternative A. These forest products would come from three forest vegetation cover types (Dry Conifer, Wet/Cold Conifer, and Wet/Warm Conifer). Approximately 66 MMBF would be harvested over 15 years. This represents 14 percent of the anticipated growth over these three cover types (82,556 acres) during this period, or 20 percent of the anticipated growth from the non-withdrawn acres (56,194 acres).

All alternatives emphasize returning treated areas to the historic species composition; however, Alternatives B and D temper this goal with working toward maintaining and/or shifting structure classes. The Dry Conifer and Wet Warm Conifer could be shifted toward later seral stages, while the Wet/Cold Conifer could emphasize shifting toward the early seral stage in areas where this is lacking. Most of the vegetation treatments are anticipated to involve thinning from below (removing smaller excess trees and insect-infested and diseased trees and leaving healthy larger trees). The most common species to be removed would be Douglas-fir and grand fir. However, depending on existing stand densities, structure goals, insect and disease infestations, and poor health of individual trees in the treatment area, other species could also be harvested. Because the early seral stage is lacking in the Wet/Cold Conifer, more trees would be removed across all species, with Douglas-fir and grand fir being preferred for removal over other healthy trees.

Limitations for conducting treatments in the vicinity of old growth stands may reduce the quantity of product that could be harvested in these areas.

Impacts from Fish and Wildlife Management

Restrictions to protect habitat (timing, stipulations, snag retention, buffers, etc.) could make forest products more difficult and expensive to remove. This would decrease the revenues that the BLM receives for forest products and would also reduce the amount of improvements that could be made to forest/woodland vegetation and other resources through timber sale contracts or stewardship contracting.

RHCAs/RCAs established by INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) would prevent harvesting of forest products on approximately 9,100 acres within these zones. Only products derived from treatments to enhance riparian habitat, which would be rare, would be obtained from these zones. INFISH/CNFISH requirements for road and landing construction could result in increased costs for removing forest products.

Under all alternatives, elk and deer habitat in forested areas would continue to require special management, which could modify timber harvest plans, making less product available. However, some forest management practices could improve habitat for big game species. In these cases there would be no impact on forest products.

Additional restrictions for snags and large trees or providing buffers may slightly reduce the amount of forest products that can be removed from each acre.

Impacts from Special Status Species Management

INFISH/CNFISH impacts are discussed above under Impacts from Fish and Wildlife Management. Under the action alternatives (Alternatives B, C, and D), guidelines outlined for bull trout, white sturgeon, woodland caribou, bald eagle, lynx, gray wolf, grizzly bear, and other special status plant and animal species require special management of habitat. While some forest management practices would improve habitat for special status species, others are likely to conflict. Timber harvest plans might require modification. Habitat requirements add limitations to road and landing construction and placement. This could result in decreased quantities and increased cost for removal of forest products. Current management would likely result in the same habitat restrictions for special status species; however these would be identified during project planning and implementation, and are not specified in the current land use plan.

Impacts from Wildland Fire Management

Current management focuses on wildland fire suppression. This would help preserve forest products for future use. Alternative B focuses fire suppression on protecting economically valuable resources which would

4. Environmental Consequences

have the same effect. Alternative C focuses suppression on protecting noncommodity resources, which may allow loss of forest products. Alternative D balances protection of commodity and noncommodity resources. The action alternatives (Alternatives B, C, and D) identify 52,319 acres where fire use would be considered. Fire use could consume forest products. However, some products could become available for salvage after fire use.

Impacts from Visual Resources Management

Timber harvesting is not allowed within VRM I areas (WSAs). Within VRM II areas, there would be constraints on timber harvests and other forest management activities. The location and construction of access roads would also be affected. These constraints would likely reduce the quantity and potentially increase the cost of removing forest products from within these areas. The magnitude and potential for impacts would correspond with the amount of area designated VRM II: 14,312 acres for Alternatives A and B; 42,273 acres for Alternative C (a 195 percent increase over current designations); and 23,551 acres for Alternative D (a 65 percent increase over current designations).

Impacts from Travel Management and Transportation Management

Areas closed to motorized travel would allow no access for firewood cutting. Areas are designated as closed to protect resources and these resource protection requirements usually preclude firewood cutting. Thus the closed designation does not have any real effect on forest products. Where motorized travel is limited, access for firewood cutting would correspond with the miles of designated roads. Areas open to off-road motorized travel would allow the most access for firewood cutting. Designations by alternative are shown in the Table below 4.3.1-1 below).

Table 4.3.1-1 Transportation and Travel Management Statistics by Alternative

Travel Designation	Alternative A (acres or miles)	Alternative B (acres or miles)	Alternative C (acres or miles)	Alternative D (acres or miles)
Open Travel Areas	63,041 ac	0 ac	0 ac	0 ac
Closed Travel Areas	162 ac	162 ac	311 ac	631 ac
Limited Travel Areas	33,567 ac	96,608 ac	96,459 ac	96,139ac
Designated Roads and Trails	27 mi	282 mi	122 mi	175 mi

Impacts from Lands and Realty Management

Land exchanges that result in a loss of forested land could affect the availability of forest products from public lands, and in the long term affect the BLM's ability to meet demands. The retention and acquisition areas under current management contain valuable timber lands. However, past land exchanges have resulted in net BLM losses of valuable timber lands. This trend could continue under current management. Alternatives B and D identify valuable timberlands and growing sites as a criteria for retention and acquisition. This would reduce the potential that these areas would be lost from BLM ownership and would increase the potential for gain. Alternative D does not contain these criteria, so there is a greater potential for loss of lands available to produce forest products.

Impacts from Special Designations Management

Special designations under all alternatives prevent timber harvesting from certain areas, and place limitations on harvesting in other areas. Most of the areas with special designations fall within existing WSAs where timber harvesting is not allowed. Therefore there would be no net loss to forest products in these areas with overlapping designations, unless the WSAs are released by Congress. The areas of special designation outside of the WSAs under any alternative would not be great enough to have a notable impact on forest products.

4.3.1.3 Cumulative Effects

Effects of past actions, natural events and regionwide assessments (fire, logging, insect and disease, road construction, ICBEMP, land exchange, etc.) that have affected forest products are documented in the Chapter 3, Affected Environment. The amount of forest products offered by the CdA FO has declined over the last 20 years. Further, the forest products market is shifting toward utilization of smaller diameter products and biomass to meet new demands.

All Alternatives

Timber harvesting levels have declined on all federal lands in northern Idaho, have held relatively constant on State Lands, and increased on private lands. Using 2003 figures for the 10 northern counties, the BLM produces 0.7 percent of the timber sold in northern Idaho (Forest Service 2003).

Wildland fires and insect and disease would continue to cause mortality. Currently, some of these dead trees are salvage logged, although a logging response to fire or insect and disease has also declined across all federal lands, and held relatively constant on state and private lands. It is uncertain whether future mortality would result in an increase in output (from salvage logging) or decrease in output (due to loss of tree, but no salvage).

Implementing the National Fire Plan and fuel reduction treatments could produce more commercial forest products that were not included in the PSQ determinations. Biomass (or hog fuel) was not considered in determining the PSQ because it was anticipated that most of this material would come from waste products accumulated at landings from logging operations and if economically feasible would be transported to utilization centers rather than burned on site. The effect on the overall market is expected to be minimal due to the percentage contributed to the market by public lands. These types of treatments frequently produce very small sized products or biomass. The market trend for these products is expected to increase as more mills become able to handle them and more uses for the product are developed. If technologies improve, it may be possible to economically retrieve biomass left in the treatment units. But under current conditions, it is basically not economical to retrieve biomass left in treatment units.

4. Environmental Consequences

4.3.2 Livestock Grazing

4.3.2.1 Methods of Analysis

Management objectives and actions could result in impacts on livestock grazing management if any management actions were to directly or indirectly change the availability of the forage base allocated to livestock or influence range improvements.

Indicators that are used to quantitatively and qualitatively assess management changes that could affect livestock grazing management include the following:

- Change in acreage available for lease for grazing;
- Change in AUMs permitted on allotments;
- Alteration of the quality or quantity of forage production; and
- Altering standard range improvements.

4.3.2.2 Impacts

Impacts from Livestock Grazing Management

Under all alternatives, BLM Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management would continue to prevent or minimize environmental effects. The standards also would continue to ensure good site productivity, properly functioning riparian and wetland areas, and vegetation communities composed of desired species, including native, special status, and desirable nonnative species. Site-specific monitoring and evaluation strategies would continue to be used to monitor success and to evaluate the need to make adjustments in permitted use. Degraded resources would be rehabilitated and reclaimed through adaptive management techniques, such as proper timing and intensity for livestock grazing, monitoring to ensure compliance with permit conditions of approval, and successful site reclamation. Continuing adjustments to grazing operations, when necessary, to comply with the Idaho Standards for Guidelines would continue to positively affect livestock over the long term. Adjustments, if necessary, could include changes in season or duration of use, using riparian pastures and exclosures, modifying forage utilization levels, and livestock conversions.

Current allocations (4,004 acres) for livestock grazing would continue under Alternatives A and B. Under Alternatives C and D, livestock grazing would be permanently removed from all vacant allotments, and the allocated land base would be reduced to 1,218 acres (30 percent of current allocation).

Impacts from Soil Resources Management

Under all alternatives, soils management considerations would generally result in enhanced vegetative conditions through actions designed to reduce erosion, which would indirectly increase forage levels that could be made available for livestock. Where the potential for accelerated erosion exists or where soil cover (vegetation and litter) may be improved, changes in the livestock season and duration of use would be required to improve vegetative cover and reduce impacts on soils. Measures identified to limit soil erosion and ground-disturbing activities affect livestock grazing activities by permanently or temporarily closing affected areas within allotments to grazing.

Impacts from Water Resources Management

Any project designed to enhance watershed health would also enhance vegetation resources by reducing erosion, which would have the indirect effect of increasing forage levels for livestock. Grazing restrictions on season and duration of use could result from actions designed to protect and enhance water resources. Protection of water quality and watershed health would in some cases require changes in livestock management, such as deferred or shortened grazing periods, riparian pastures, increased cattle herding, and upland water development. Managing vegetation to meet desired future conditions would positively affect livestock grazing by providing shade in riparian areas within woody communities; however, there would be a reduction in forage availability and forage base. Management actions that result in increased water availability and forage base would indirectly affect livestock through improved livestock distribution and increased weight gain and conception rates. Protecting water quality standards would also affect livestock grazing by successfully managing habitat and water supplies for livestock grazing.

Impacts from Vegetation – Forests and Woodlands Management

All grazing allotments are within forested vegetation cover types. Therefore, under all alternatives, forest vegetation treatments within grazing allotments that are designed to restore species composition or to create early or open structure would promote growth of livestock forage in the long term. Vegetation treatment areas would receive short-term deferments from grazing to allow vegetation to recover. Vegetation management also could result in grazing management adjustments in the season and duration of use. Under Alternatives A and B, approximately 50 percent of the area allocated to grazing falls within a WSA where no vegetation treatment would occur. Under Alternatives C and D, only 1,218 acres are allocated to grazing. Therefore, the potential that forest vegetation treatments would affect grazing allotments under any alternative is low.

Impacts from Vegetation-Riparian and Wetlands Management

Livestock adjustments in riparian areas could be implemented if riparian areas are degraded and do not continue to achieve PFC for riparian and wetland vegetation as directed by the Idaho Standards for Rangeland Health and Guideline for Livestock Grazing Management. However, only 37 acres are within grazing allotments within riparian zones under Alternatives A and B, and only 11 acres under Alternatives C and D. Because riparian vegetation within grazing allotments would continue to be in proper functioning condition, there is little potential that riparian and wetlands management would impact grazing.

Impacts from Vegetation-Invasive Species and Noxious Weeds Management

Under all alternatives, actions to prevent and control invasive and noxious weeds using integrated weed management techniques could affect livestock grazing in the short term by excluding grazing in treatment areas until revegetation has taken place. Livestock grazing would benefit over the long term by increasing forage, as the ecological condition of vegetation in grazing allotments improves following restoration.

Impacts from Wildland Fire Management

Fire suppression under all alternatives could result in tree canopy closure and ingrowth, which would reduce available forage for livestock, while fuels reduction treatments would have the opposite affect. Fire would have both short-term and long-term impacts. In the short term, BLM policy requires that areas burned by wildland fires and planned fuels management project sites receive a minimum of two or more growing seasons of rest from livestock grazing to ensure species regrowth and to ensure that existing vegetation or seeded vegetation become established. In addition, vegetation resource objectives must be reached before grazing is reauthorized. In the long term, fire, depending on its intensity, would enhance growth of forage. Wildland fire use would increase the potential that this would occur. Current management calls for fire

4. Environmental Consequences

suppression and does not allow for wildland fire use. However, the action alternatives identify areas outside the WUI where fire use would be considered. Under Alternative B, 54 percent of the area allocated for grazing (4,004 acres) falls within a fire use area. Under Alternatives C and D, 100 percent of the area allocated for grazing (1,218 acres) is within a fire use area.

Impacts from Visual Resource Managements:

Restrictions in VRM Class I and II areas (2,520 acres under Alternatives A and B, 214 acres under Alternatives C and C) may change the type, design, and location of proposed range improvements, but the restrictions may not necessarily preclude development that would result in negative long-term effects. Range improvements would have to be moved or altered if they occur in the expanded viewsheds. However, mitigation should enable most fence and water improvement actions and events to proceed. Construction activities from other resource programs would also have to be mitigated, which could reduce the extent of forage lost.

Impacts from Forestry and Woodland Management:

Impacts are described under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Minerals Management

All grazing allotments are open to mining under all alternatives. Mineral development impacts livestock grazing in the short term and the long term by decreasing the amount of grazing acreage available during construction and operation of such facilities. However, such impacts are minimal because most grazing allotments in the field office do not coincide with existing or potential mineral development areas.

Impacts for Transportation and Travel Management

Motorized travel can result in incidental damage to range improvements and general disturbance of livestock. Off-road motorized travel has the greatest potential for impacts. Under current management, 2,165 acres (54 percent) of the area allocated to grazing is open to off-road travel. There are no areas open to off-road travel under the other alternatives. Since there are fewer than 2 miles of designated roads and trails within allotments under any alternative, impacts of such designation would be insignificant.

Impacts from Lands and Realty Management

Depending on the activity, impacts from land and realty management actions on livestock grazing are direct or indirect, short-term or long-term. Direct short-term impacts are caused by constructing ROW for roads or transmission lines and other construction activities that temporarily remove forage and displace livestock until restoration and reclamation are complete. Long-term negative effects include direct loss of forage where roads and facilities are constructed, reduced forage palatability because of dust on vegetation, and disturbance and harassment caused by increased levels of human activity. Management of livestock would be problematic because of increased levels of human activity; fences could be damaged, gates could be left open and noxious and invasive weeds could proliferate. All these impacts result in reduced forage, lowered livestock performance, increased mortality, or increased management costs. Reclamation of short-term disturbances would usually replace lost forage in the long term. Current management has no specific restrictions on where activities allowed under ROW grants, leases, or permits may occur. However, the action alternatives (Alternatives B, C, and D) identify ROW exclusion areas, where such authorizations would not be allowed, and ROW avoidance areas, where authorizations would only be granted when there was no practical alternate location. Thus impacts would be concentrated within areas outside of exclusion and avoidance area. Only 10 percent of the area allocated to grazing is outside of exclusion and avoidance areas under Alternative B, while 80 percent and 98 percent of the area is outside under Alternatives C and D, respectively.

Land tenure can also impact livestock grazing, if allotments are exchanged or otherwise adjusted from federal ownership. Conversely, acquired lands could be allocated to livestock grazing. Retention and acquisition areas are defined by a geographic boundary under current management. Approximately 2,124 acres (53 percent) of the area allocated for grazing falls within this boundary. Thus 47 percent of the area allocated to grazing would be available for exchange or adjustment. The action alternatives (Alternatives B, C, and D) have both criteria and a geographic boundary derived from the criteria for retention and acquisition. Only Alternative B lists forage for livestock among these criteria, and 3,571 (89 percent) of the allotments fall within the geographic retention boundary. Under Alternative C, only 231 acres (19 percent) of the allotments fall within the geographic boundary, and only 9 acres (>1 percent) do so under Alternative D. Thus the potential for impact is least under Alternative B, and greatest under Alternative D.

4.3.2.3 Cumulative Impacts

The region of influence used to analyze cumulative impacts on livestock grazing includes actions that occur on or adjacent to all allotments located entirely or partially within the planning area. Past actions that have affected livestock grazing include human-caused surface disturbances (mineral development, recreation, and prescribed burning), wildland fires, and historic grazing practices that have contributed to current ecological conditions. Present actions affecting livestock grazing are mainly those that reduce available grazing acreage or the level of forage production in those areas. Key examples include wildland fires, drought conditions, land disposals, OHV use, habitat restoration, and special designations that restrict grazing. Future actions affecting livestock grazing would be similar to present actions including any restriction associated with future species listings under the Endangered Species Act.

The cumulative impacts under each of the alternatives on livestock grazing would be very similar and would parallel the impacts of the alternatives in the general impact analysis. In general, every alternative would reduce forage for livestock in the short-term during treatment activities, other surface disturbing and disruptive activities, human disturbance, and the presence of grazing wildlife. Forage would increase over the long-term, however, as treated vegetation communities reach potential productivity providing a beneficial impact to the industry. Cumulative actions and events that increase human disturbance in grazing areas can also displace, injure or kill animals. Changes to visual resource management cumulatively impact livestock grazing by dictating what type of range improvements are allowed in varying visual resource class areas. Standard mitigation identified in the BLM Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management would be implemented across all alternatives and any other cumulative actions and events, thereby reducing or minimizing cumulative impacts.

4. Environmental Consequences

4.3.3 Minerals Management

4.3.3.1 Methods of Analysis

Alternative objectives and actions were analyzed to determine if they impact minerals management by limiting or prohibiting development. Indicators of impacts include:

- Special management requirements or standards for development
- Limitations on facilities and activities
- Withdrawals

The following assumptions were applied to the analysis:

- Mineral activities authorized prior to RMP implementation would continue to operate as outlined in existing approved plans;
- Demand for mineral materials over the next 20 years will be driven by the continued urbanization of North Idaho;
- Demand for locatable minerals will be driven by the market price for the specific commodities; and
- The possibility of any activity within the planning area related to leasable commodities (oil and gas, solid minerals, and geothermal resources) would be unlikely.

4.3.3.2 Impacts

Impacts from Minerals Management

Objectives and actions identify the BLM land available for mineral development and whether or not site-specific restrictions are required to protect other resources. BLM land is identified as open/closed to the operation of the mining laws (locatable minerals) and open/closed to the mineral leasing laws (includes both leasable and salable minerals). On BLM land open to the leasing laws, certain areas are subject to surface use stipulations in addition to those on the standard lease/permit form. These additional restrictions include NSO, CSU, and TL stipulations. In many instances, more than one stipulation may apply on the same parcel of land. The percentage of BLM land withdrawn (closed) to the mining laws, closed to the leasing laws, and open to leasing with additional restrictions, by alternative, is displayed in Table 4.3.3-1. Alternative C is the most restrictive of locatable mineral development, and Alternatives C and D have the greatest amount of leasing stipulations.

Table 4.3.3-1 Percent of BLM-Managed Lands in the Planning Area Withdrawn or Stipulated				
	Alternative A	Alternative B	Alternative C	Alternative D
Acres withdrawn from mining laws	5%	5%	31%	6%
Acres closed to mineral leasing laws	24%	24%	24%	24%
Acres of NSO	0	15%	29%	29%
Acres of CSU	0	69%	69%	68%
Acres of TL	0	29%	29%	29%

Impacts from Water Resources Management

Under all alternatives, mineral development would be required to implement BMPs to protect water quality.

Impacts from Vegetation—Riparian and Wetlands Management

Impacts from riparian and wetland vegetation management are related to implementation of INFISH (Alternative A) and CNFISH (Alternative B), and are described under Impacts from Fish and Wildlife Management below.

Impacts from Fish and Wildlife Management

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) establish six standards and guidelines related to mineral activities which are incorporated into the surface use stipulations in the action alternatives (Alternatives B, C, and D). These would restrict mineral development to protect fish and other aquatic habitats important to both fish and wildlife. Impacts on mineral development would be implementing BLM inspection, monitoring and reporting requirements that could require further mitigation to protect fish and wildlife resources. Requirements to reclaim areas disturbed during and after mining activities could increase costs if nonstandard technologies were required to facilitate mineral activities within the restricted areas.

Alternative A: To protect fish, INFISH requires mineral development (mining and facility construction and operation) to be located in areas outside of RHCAs. This would make approximately 9,099 acres off limits to development. There would be no NSO or timing limitation (TL) stipulations on mineral leasing or mineral material disposals. Closing roads to traffic part of the year may reduce access for mineral development. Alternative A would have the least number of restrictions on mineral development when compared to the other alternatives.

Alternatives B, C, and D: Implementing RCAs would reduce areas available for mineral development. Alternatives B, C, and D would include 9,099 acres of NSO stipulations for RCAs. Alternatives B, C, and D would also include 1,567 acres of NSO restrictions for raptor nests, which would limit mineral leasing and mineral material disposals. Alternatives B, C, and D would include 27,852 acres of timing limitations for deer and elk winter range from December 15 to March 31, and 285 acres of timing limitations for bald eagle winter feeding areas from November 15 to February 15. Leasable mineral and mineral material operations would be restricted during these periods.

Timing and spatial restrictions may increase costs associated with exploration and development of mineral resources under Alternative B, C, and D. The pace at which those activities can proceed may slow to accommodate fish and wildlife needs. Surface use stipulations (NSO) would increase costs if nonstandard technologies were required to facilitate mineral activities in restricted areas.

In addition, Alternative C would reduce road densities to one mile of road per square mile or less, outside of urban or rural areas. Road decommissioning and road closures would reduce access for mineral development.

Impacts from Special Status Species Management

INFISH and CNFISH impacts are described under Impacts from Fish and Wildlife. Alternative A does not include any other special status species objectives or actions that would impact minerals management.

Alternative B: There would be no NSO restrictions for special status plant species and rare plant communities. Alternatives B, C, and D would include 39,262 acres of CSU restrictions related to special status terrestrial wildlife. These would restrict mineral leasing and mineral material disposals.

Alternatives C and D: The effects from special status species management would be the same as Alternative B except that these alternatives would also reduce road densities in wolverine habitat to one mile of road per square mile of land, which would reduce access for mineral development. In addition, Alternatives C and D

4. Environmental Consequences

would include 15,716 acres of NSO restrictions for special status plant species and rare plant communities. These would restrict mineral leasing and mineral material disposals.

Impacts from Wildland Fire Management

Fire suppression would protect mining operations from wildland fire. This would be slightly less under Alternatives C and D. Alternative C emphasizes suppression to protect noncommodity resources, and D balances commodity and noncommodity resources.

Impacts from Cultural Resources Management

Under all alternatives, protection measures for cultural resources eligible for listing on the NRHP generally include avoidance or other mitigation actions. These protective measures restrict, or in rare cases, prohibit mineral development that would otherwise adversely affect the cultural resources. If the NRHP-eligible cultural resource sites were small, access roads, potential drill pads, pipelines, and other ancillary facilities would be relocated to avoid adverse impacts. Avoidance measures occasionally require installation of facilities in areas that are more difficult to develop or reclaim which would potentially increase impacts on other resources.

Alternative B: Under this alternative, 2,870 acres would be subject to NSO restrictions to protect cultural values. This would restrict mineral leasing and mineral material disposals. Alternative B is the second least restrictive alternative.

Alternative C: Although no surface use restrictions are identified specifically to protect cultural resources, the areas identified under Alternative B would be protected as ACECs, which do have an NSO stipulation. This alternative is the most restrictive in terms of cultural resources management. All land with cultural resources would be proposed for withdrawal from the mining laws, which would preclude locatable minerals development.

Alternative D: Under this alternative, 2,897 acres would be subject to NSO restrictions which would restrict mineral leasing and mineral material disposals. This would be the third least restrictive alternative.

Impacts from Visual Resources Management

Under all alternatives, any mineral development that occurs within the 21,714 acres of WSAs would have to meet VRM Class I, allowing only very small changes to the characteristic landscape which do not attract attention. Slightly less restrictive stipulations would be applied to mineral leasing and mineral material disposals in areas with a VRM Class II rating, where small changes to the characteristic landscape that do not attract attention would be allowed. Alternatives A and B designate 14,312 acres as VRM II; Alternative C designates 42,273 acres, and D designates 23,551 acres. VRM I and II areas combined equate to 37 percent of BLM lands under Alternatives A and B, 66 percent under C, and 47 percent under D. VRM II areas under the action alternatives (Alternatives B, C, and D) also have a controlled surface use (CSU) stipulation for leasing.

Impacts from Transportation and Travel Management

Use of motorized vehicles for casual use mineral exploration would be restricted by travel management designations. There would be no restrictions within areas open to off-road travel, but use of motorized vehicles would be restricted to designated roads in limited areas, and would not be allowed within closed areas. In addition, seasonal and vehicle class restrictions on some designated roads and trails under all alternatives could further constrain exploration. Mineral development within a closed area requires submission of a plan of development for BLM approval.

Alternative A: Alternative A identifies 63,041 acres as open. This is the only alternative that has an open area, and is thus the least restrictive to mineral exploration. Within the limited area, motorized vehicle travel could occur on 27 miles of roads and trails. About 162 acres would be closed to motorized travel.

Alternative B: This alternative designates 282 miles of roads and trails. Most of the additional designation occurs within the area that is open under Alternative A. The closed area is identical to Alternative A.

Alternative C: This alternative designates only 122 miles of roads and trails open to motorized travel. 311 acres would be closed under this alternative. This is the most restrictive of all alternatives regarding motorized travel.

Alternative D: Alternative D designates 175 miles roads and trail open to motorized travel. 531 acres would be closed under this alternative.

Impacts from Lands and Realty Management

When BLM exchanges or otherwise adjusts lands in this field office, the mineral rights are included. BLM also includes mineral rights in acquisitions. Thus there is the potential for loss or gain of minerals. Mineral potential is always a consideration for the value of lands during exchanges and acquisitions. Only Alternative B lists mineral potential as a criterion for retention and acquisition. Therefore this alternative has the least potential for loss of minerals from federal ownership.

Lands and realty actions could impact minerals management through restrictions and limitations on ROW and use authorizations, and through direction regarding expired withdrawals.

Alternative A: Current management does not specify any specific restrictions on ROW authorizations or land use permits. There is also no direction regarding expired mineral withdrawals.

Alternative B: This alternative would involve 21,636 acres (22 percent of BLM land) of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres (24 percent of BLM land) of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. ROWs and use permits would be concentrated in the remaining 51,548 acres (54 percent of BLM land). At the termination of a withdrawal, the decision to keep or adjust lands would be based on several criteria, including mineral potential, which may open more areas to mineral development. Restrictions from withdrawals on public use of resources would be limited.

Alternative C: This alternative would involve 21,819 acres (23 percent of BLM land) of ROW exclusions and 46,273 acres (48 percent of BLM land) of ROW avoidance areas. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres (29 percent of BLM land). In addition, BLM would recommend or retain withdrawals to protect cultural and natural resources from impacts that would otherwise result from authorized uses.

Alternative D: This alternative would involve 22,069 (23 percent of BLM land) acres of ROW exclusions and 13,688 acres (14 percent of BLM land) of ROW avoidance areas. Authorizations would be concentrated on the remaining 67,033 acres (63 percent of BLM land). Guidance for expired withdrawals is the same as Alternative C.

4. Environmental Consequences

Impacts from Special Designations Management

Limitations on mineral development may be imposed in river corridors designated as scenic or recreation, except those areas where valid existing rights exist. Implementation of BLM's interim management plan (IM-8550-1) for WSAs would preclude leasable mineral development and severely limit mineral material development. Locatable mineral activities could occur only in a manner that would not impair the suitability of an area for inclusion in the wilderness system. In addition, ACECs under the action alternatives (Alternatives B, C, and D) would have an NSO stipulation, and all eligible and suitable wild and scenic river segments would have either an NSO (wild) or a CSU (recreation and scenic). Table 4.3.3-2 shows the acres for these stipulations by alternative.

Table 4.3.3-2 Special Designation Surface Use Stipulations				
	Alternative A	Alternative B	Alternative C	Alternative D
NSO (acres)	0	77	5,599	458
CSU*(acres)	0	0	800	800

* Only the acres associated with wild and scenic river segments are shown. This is a component of CSU-3, which includes protection of other recreation values.

Impacts from Socioeconomic Resources Management

Health and Safety. Under all alternatives, consolidating old mine wastes in repositories for possible future reprocessing could be beneficial to mineral development. Access to minerals would be reduced by several health and safety-related proposals, including proposed withdrawals and site restrictions (requiring mining plans and bonding). Restoring abandoned mine sites to acceptable levels of physical safety and removing hazardous materials from abandoned lands could lead to protective measures to ensure the sites are safe for future activities.

Alternative B: Under this alternative, sites with potentially hazardous materials would be restricted under the mining law with special conditions requiring no disturbance of the hazardous materials, or stipulations to ensure that they were properly handled and bonded under the mining law. Sites with significant known hazardous materials, 51 acres, would be subject to NSO restrictions for mineral leasing and mineral material disposal.

Alternative C: Under this alternative, sites with significant hazardous materials or significant cleaned up and restored sites would be closed under the mining law. Potentially hazardous materials sites would be restricted under the mining law with special conditions requiring no disturbance of the hazardous materials, or stipulations to ensure that they were properly handled and bonded under the mining law.

Alternative D: The effects from public safety management would be the same as Alternative B except that this alternative would include 786 acres of NSO restrictions for public safety. Significant sites would be closed to motor vehicles which would require a plan of operations to ensure that they were properly handled and bonded under the mining law.

4.3.3.3 Cumulative Effects

Alternative A: The impacts of the management activities proposed under Alternative A in the CdA RMP are described in the direct and indirect effects section. Alternative A would involve the greatest area open to mineral leasing and mineral material disposals without restrictions. Alternatives A and B would also withdraw fewer acres from the mining laws, which would exclude locatable mineral activities, than Alternatives C and D. Combined with past, present, and foreseeable future mineral activities on other public lands, state lands,

tribal lands, and private lands, the cumulative result of this alternative would be to allow more mineral activities than the other alternatives. The specific potential impacts on minerals from other past, present, and future actions in northern Idaho are discussed below.

Northern Idaho has experienced extensive mineral activities over the past 140 years. Mining will continue on public, tribal, state, and private lands, depending on the price of commodities and the expense of complying with environmental regulations. The Silver Valley Mining District historically has been the largest silver district in the world. Because of low commodity prices and high potential environmental liabilities, only two silver-based mines continue to operate at a low level in this district currently. If the price of silver increased, silver mining activities would be expected to increase as well. Because the potential liability environmental cleanup costs are high in this Superfund site area, the price could increase significantly to offset the expense of environmental compliance.

Within the planning area, little future mineral development is expected, with the exception of sand, gravel, crushed rock, and decorative stone, which are likely to increase with increasing demands of the growing population. The population within the planning area has increased by 41 percent and is projected to continue to grow at a rate of 36 percent between 2000 and 2020, resulting in a need for more mineral materials to support infrastructure and building construction.

The amount of BLM-administered land in the CdA FO and CFO has decreased by approximately 29 percent since 1981. Depending on whether mineral rights were retained, the area open to mineral activities may have been reduced. Regardless, the BLM no longer controls the surface management of these areas, potentially resulting in restrictions to mineral activities.

The future rate of road development is unknown on private and State of Idaho lands. Continued development of recreation opportunities could result in increased access, which would also benefit mineral access.

Wildland fires will continue to be suppressed on all land ownership types to reduce the risk to resource values, including minerals. This policy may prevent large wildland fires from spreading to areas of mineral activity.

Increased conservation of fish and wildlife could result in more restrictions of mineral activities. As species are delisted under the Endangered Species Act, the conservations measures would continue to be enforced to reduce chances of relisting that could restrict surface disturbances. Water quality concerns may result in restrictions of surface disturbances related to mineral activities. Implementation of the management strategy in ICBEMP could also increase restrictions to mineral activities on public lands. Similarly, increasing restrictions to mineral activities to reduce the spread of invasive species may be imposed. Increased enforcement of mineral restrictions related to cultural and archaeological sites could reduce access for mineral activities in the future.

Implementation of the Forest Plans in National Forests in the planning area will likely restrict surface disturbances and road access related to mineral activities. These management plans emphasize resource protection over commodity production.

Alternative B: The impacts of the management activities proposed under Alternative B are described in the direct and indirect effects section. Alternative B would include fewer restrictions on mineral activities than Alternatives C or D. Alternatives A and B would also withdraw fewer acres from the mining laws, which would exclude locatable mineral activities, than Alternatives C and D. Combined with past, present, and

4. Environmental Consequences

foreseeable future mineral activities on other public lands, state lands, tribal lands, and private lands, the cumulative result of this alternative would be to allow more unrestricted mineral activities than Alternatives C or D. The specific potential impacts on minerals from other past, present, and future actions in northern Idaho are discussed under Alternative A.

Alternative C: The impacts of the management activities proposed under Alternative C are described in the direct and indirect effects section. Alternative C would include the most restrictions on mineral activities. Alternative C would also withdraw the most acres from mining laws, which would exclude locatable mineral activities. Combined with past, present, and foreseeable future mineral activities on other public lands, state lands, tribal lands, and private lands, the cumulative result of this alternative would be to allow the least unrestricted mineral activities. The specific potential impacts on minerals from other past, present, and future actions in northern Idaho are discussed under Alternative A.

Alternative D: The impacts of the management activities proposed under Alternative D are described in the direct and indirect effects section. Alternative D would include the more restrictions on mineral activities than Alternatives A or B. Alternative D would also withdraw more acres from mining laws than Alternative A or B, which would exclude locatable mineral activities. Combined with past, present, and foreseeable future mineral activities on other public lands, state lands, tribal lands, and private lands, the cumulative result of this alternative would be to allow less unrestricted mineral activities than Alternatives A or B. The specific potential impacts on minerals from other past, present, and future actions in northern Idaho are discussed under Alternative A.

4.3.4 Recreation

4.3.4.1 Methods of Analysis

Management actions could result in impacts on recreation resources if any management actions were to directly or indirectly change the quantity and availability of recreational opportunities. Indicators that were used to quantitatively and qualitatively assess management changes that could affect recreation management include the following:

- Number of developed recreational opportunities
- Number of dispersed recreational opportunities
- Setting attributes managed

The analysis is based on the following assumptions:

- The demand for recreational use would continue to increase over the life of the plan;
- Recreational visits are estimated to continue increasing at an annual rate of one to four percent;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase with increasing use of public lands.

4.3.4.2 Impacts

Impacts from Recreation Management

Each alternative has a specific recreation market emphasis. Alternatives differ in the number and acres of SRMAs managed, and the type of recreation emphasis within each SRMA. Although the recreation opportunity spectrum (ROS) classes do not change, the alternatives differ in how much of the ROS classes are more intensively managed in an SRMA or custodially managed in the ERMA. Explicit recreation management actions to achieve specific defined opportunities or benefits would not occur in the ERMA and recreation experiences would be variable and unpredictable. As a result of these differences, developed and dispersed recreation opportunities change with each alternative.

Management would strive to maintain a diversity of recreational opportunities, while also maintaining the rural and roaded-natural settings that currently occur. Impacts from providing this type of recreational setting would increase human interaction at developed sites. Conversely, management would accommodate visitors who desire a recreational experience outside developed sites and where visitor contact is less.

Under all alternatives, recreation management actions would continue to support an array of recreational opportunities in the planning area, including hunting, fishing, horseback riding, OHV use, boating, and camping. Continuing to authorize special recreation permits for recreational uses of public lands for commercial hunting and fishing and organized events would add to the overall range of recreational opportunities available in the planning area. Special use authorizations that would be granted based on demonstrated public need or benefit would ensure that recreational use is compatible and consistent with other resource uses. Limiting special use authorizations for commercial, competitive, and organized group activities would concentrate recreational uses to smaller areas and would decrease the potential for a greater number of these type of activities to spill over into surrounding areas where a more dispersed and primitive recreational experience is desired.

4. Environmental Consequences

Also under all alternatives, providing controls and limits at developed recreation sites would protect visitors and indirectly protect other resources, such as vegetation, wildlife habitat, and water quality. This would be accomplished by limiting motorized travel to designated developed roads, closing Blackwell Canals to motorized boats (except for the portion developed for boat launching), closing developed day-use areas to overnight camping, and continuing to place special restrictions on Blackwell Island, Mica Bay Boater Park, and Blue Creek Bay.

Under all alternatives, continuing to authorize special recreation permits for recreational uses of public lands in the SRMAs for commercial outfitting and guiding and for organized events would add to the overall range of recreational opportunities available in the planning area. As the recreation field expands and new recreation activities are created, additional special recreation use permits would be allowed, on a case-by-case basis.

Table 4.3.4-1 below shows the percentages of BLM land by ROS category that is within an SRMA, broken down by ROS category across the alternatives.

Table 4.3.4-1 Percent of Land by ROS Category within SRMAs				
ROS Category	Alternative A	Alternative B	Alternative C	Alternative D
Rural	12%	70%	8%	66%
Roaded natural	6%	70%	38%	71%
Semiprimitive	0%	62%	93%	93%
Total BLM Land – All Categories	3%	66%	63%	82%

Alternative A: Under Alternative A, management would continue to identify and classify units of public land as recreation management areas to provide prescribed outdoor recreation opportunities. The CdA FO would continue to manage Coeur d'Alene Lake, Lower Coeur d'Alene River, and Gamlin Lake SRMAs. This alternative would manage recreation on the least amount of acreage (three percent) of any alternative, leaving the rest vulnerable to changing toward a more developed ROS class. Only a small portion of the rural and roaded natural areas is within the SRMAs. Most of the BLM land (97 percent) and all of the semiprimitive acres fall within the ERMA.

Alternative B: Under Alternative B, management would emphasize community-based recreation-tourism. The BLM would manage six SRMAs, comprising 66 percent of BLM lands. Under alternative B, 70 percent of the rural and roaded-natural acres would be managed, while 62 percent of the semiprimitive acres would be managed. There would also be a greater emphasis on providing for facility-dependent recreation activity opportunities.

Custodial management actions would occur in the ERMA, as described for Alternative A, but the ERMA would comprise only 34 percent of BLM lands. Most of the land in the ERMA would be in semiprimitive and roaded natural settings.

Alternative C: Under Alternative C, management emphasizes recreation opportunities for undeveloped/dispersed recreation-tourism markets, and there is a greater emphasis on providing resource-dependent recreation opportunities. Under this alternative, 8 percent of the rural, 38 percent of the roaded-natural, and 93 percent of the semiprimitive would be managed within an SRMA. The ERMA would make up approximately 37 percent, slightly more than in Alternative B. This alternative would include most of the roaded natural and rural acres in the ERMA.

Alternative D: Under this alternative the BLM would identify recreation management areas and would emphasize recreation opportunities toward both undeveloped/dispersed recreation-tourism markets and community recreation-tourism markets. The BLM would manage seven SRMAs, which total about 82 percent of BLM lands, the highest under any alternative. Using this strategy, the BLM would manage the most acres toward recreation-related goals and objectives and would provide the most recreation opportunities for users. Custodial management would still occur in the ERMA, which would primarily be roaded-natural.

Impacts from Air Quality, Soils, and Water Quality Management

Under all alternatives, management direction for these resources complements recreation management objectives, ensuring setting attributes are maintained.

Impacts from Vegetation – Forests and Woodlands Management

Under all alternatives, treatments for the restoration of forested vegetation to historic condition could indirectly affect recreation by improving conditions for hunting, fishing, and wildlife viewing over the long-term. A long-term impact would result from vegetation removal which would change the visual quality of the landscape. There could also be short-term impacts on recreation users when facilities, trails, and routes are closed during treatments. These closures would affect recreation opportunities by temporarily limiting access and altering recreation use patterns. Forest vegetation treatments would also have short-term impacts on recreation from noise and truck traffic on roads.

The potential for impacts would correspond with the number of acres treated under each alternative. Alternative A calls for treatment of 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C calls for an 83 percent reduction, while D calls for a 17 percent increase.

Impacts from Vegetation—Riparian and Wetlands Management

Alternatives primarily vary by the objective for achieving PFC of riparian and wetland vegetation. Achieving this goal would enhance recreational experiences for most users, as it could lead to enhanced fisheries conditions, enhanced aesthetic qualities, and enhanced wildlife habitat. Enhanced fishing opportunities and increased opportunities for wildlife viewing would follow. Alternatives A, C, and D set an objective of 75 percent of riparian and wetland vegetation achieving PFC, while Alternative B sets an objective of only 50 percent. Thus Alternative B would have less impact than the other alternatives.

Impacts from Vegetation—Invasive Species and Noxious Weeds Management

Under all alternatives, measures for the prevention and control of invasive species and noxious weeds, including a focus on ground-disturbing actions and events, permitted activities, and educating the public, would help to preserve native vegetation, which may be more desirable to recreationists. Under Alternative C, some recreation areas would need to have site improvements to provide wash stations.

Impacts from Fish and Wildlife Management

Under all alternatives, protecting and improving wildlife and fish habitat would continue to provide opportunities for recreational uses and such as hunting, fishing, and wildlife viewing. Established criteria to protect wildlife and fish habitat would create short-term impacts on recreation users as described under Impacts from Vegetation – Forests and Woodlands Management.

INFISH (Alternative A) and CNFISH (Alternative B, C, and D) promote restoration of aquatic, riparian, and wetland habitats, including maintaining and restoring watersheds. A site-specific analysis would be necessary before a new recreation facility (including trails and dispersed sites) could be built within an RHCA/RCA. This additional analysis may delay the development of small recreation facilities. In addition, recreation

4. Environmental Consequences

facilities may need to be relocated if the facility is within an RHCA/RCA and cannot meet riparian management objectives.

Alternative A: Protecting deer habitat by buffering new roads and closing all roads to public vehicular access in heavy use, fawning, rut, and lick areas would restrict locations of new recreation facilities and roads. These actions would also restrict access to recreation opportunities via motorized roads during the peak recreation use seasons (spring, summer, and fall) within sensitive deer habitat. The magnitude of this action would affect different user groups in different ways. For example, hikers and others engaged in nonmotorized recreation would directly and indirectly benefit over the short and long terms, but such actions would likely affect motorized vehicle users because of the restrictions.

Maintaining a buffer around active raptor nests would place restrictions on the location of new recreation facilities and may close recreation facilities close to occupied nests. However, preserving this resource would enhance the recreation experience and would provide more opportunity for visitors to view raptors.

Alternative B: There would be no actions that address road closures or buffers for new construction to specifically protect deer habitat. Impacts on recreational use would therefore depend on recreation type, level of use, and season. Conflicts could arise, for example, among different recreation use groups. The discussion of impacts on Transportation and Travel Management provides additional discussion.

Raptor protection is similar to Alternative A, except the restrictive buffer is half the size of the buffers in Alternatives A and C. Human activity is also less restricted, with a 50-yard buffer around occupied nests outside of urban and rural areas.

Alternative C: There are no actions that address road closures or buffers for new construction to specifically protect deer habitat. Alternative C emphasizes minimal management and minimal human interaction to achieve better habitat conditions over the long term. As under Alternative B, impacts on recreational use would, therefore, depend on recreation type, level of use, and season. Similar to Alternative B, conflicts could arise among different recreation use groups. Refer to the discussion of impacts on Transportation for additional discussion.

For raptor protection, the impacts are similar to Alternatives A and B, except that buffers from the raptor nests would be more restrictive of human activities than under either Alternatives A or B.

Alternative D: General impacts would be similar to Alternative B. Impacts from the protection of active raptor nests is similar to Alternative A, but the restrictive buffer for human activity is larger and more restrictive outside of the urban and rural areas than inside these areas.

Impacts from Special Status Species Management

Under all alternatives, protecting special status fish, wildlife, and plants could result in short- and long-term impacts on recreation users similar to those described under Impacts from Fish and Wildlife Management. Impacts from implementing INFISH and CNFISH are specifically addressed in that section. Management for the federally protected (as listed under the ESA) bald eagle, Canada lynx, gray wolf, grizzly bear, woodland caribou, yellow-billed cuckoo, Spalding's catchfly, and water howellia would take precedence over recreation when conflicts between recreational use and habitat protection occur. Grizzly bear conservation measures would prohibit public recreation access improvements under all alternatives, and would put limits on motorized recreation.

Alternative A: Special status species management would affect recreation by increasing restrictions on certain activities. Taking corrective actions, such as initiating temporary emergency closures or amending route designations through the travel management plan, would displace recreational activities in areas identified for species or habitat protection. As a result, wildlife and habitat would improve, thereby improving such recreational experiences as wildlife viewing. Measures for protecting special status species would seasonally and possibly permanently preclude snowmobile and OHV use in certain areas, resulting in short-term and possibly long-term impacts on snowmobile/OHV users. Areas with highly sensitive species could require a plan amendment to close the area; however, protection could also be addressed by adjusting route designation in the travel management plan, while still leaving the area limited to motorized and mechanized travel.

Alternative B: The recommended withdrawal of public lands within 300 feet of streambeds from mineral leasing and location, to protect white sturgeon and bull trout habitat, could indirectly enhance the water- and land-based recreation experience along streams, because retention of a protective buffer would retain a desirable setting for human recreational activity. Riparian buffers would cover approximately 12,863 acres under this and all alternatives.

Adopting resource conservation measures for the bald eagle would help ensure species preservation and subsequent wildlife viewing opportunities. Conversely, viewing opportunities would be restricted at nest and roost sites to ensure security for the birds. BLM-authorized actions within 0.25 mile from the shoreline of feeding waters between November 15 and February 15 would be implemented to avoid adversely affecting feeding bald eagles. All recreation activities, including under special recreation use permits, would be suspended in that area during that time, if the activity had been determined to adversely affect bald eagles.

BLM-authorized actions within 0.25 mile of nest sites from March 1 to July 20 would be implemented to avoid adversely affecting nesting bald eagles. All recreation activities, including special recreation use permits, would be suspended in that area during that time, if the activity had been determined to adversely affect bald eagles.

Picnicking, camping, blasting, firearm use, timber harvest, and low level aircraft operations would not be allowed within 0.25 mile of nests and roosts during periods of eagle use. This would limit recreation activities within the said time and area. The opportunity to view bald eagles would increase, due to the protective measures.

Location of new recreation facilities would be limited because permanent structures that would be occupied during periods of eagle use would not be constructed near nesting or winter use areas. In addition, buildings would not be constructed closer than 0.25 mile from the shoreline of feeding waters.

Locating recreation facilities, such as day-use areas and trails, may change the areas where special recreation use activities would be limited and where humans would need to be guided away from important feeding perches prevented in nesting and roosting areas.

Providing eagle viewing and interpretive areas would provide a unique beneficial experience for the public if risks associated with human access and disturbance opportunities can be controlled and minimized. This action would increase the interpretative recreational opportunities offered by the FO.

Within lynx areas there would be no new designated snow play areas or snow compaction activities (groomed trails) under Alternative B. Opportunities to expand snowmobiling would be limited to 37,612 acres, as

4. Environmental Consequences

opposed to 0 acres under Alternative A, 49,100 acres under Alternative C, and 53,236 acres under Alternative D.

Stipulations added to special use permits could be required to mitigate impacts on wolves. Specific mitigation would be localized and implemented on a case-by-case basis.

All current and future recreational use would be analyzed for compatibility with grizzly bear spatial and habitat requirements.

Alternative C: Impacts under Alternative C would be the same as Alternative B except that this alternative would also reduce road densities in wolverine habitat to one mile of road per square mile of land, which could lead to road closures in these sensitive areas. The effects of this would include fewer roads available for OHV users, and more restored or intact areas available to hikers or cross-country skiers.

Alternative D: New recreation facilities and uses (including dispersed recreation) and special use permits should not interfere with the special status species protection programs and activities. This may limit the development and/or expansion of recreation facilities and activities. The result of these programs should show an increase in the species population, which may enhance wildlife viewing opportunities. In general, the impacts would be similar to Alternative B.

Impacts from Wildland Fire Management

Under all alternatives, use of public lands for recreation could be affected where the need for fire and nonfire treatments, mitigation strategies, hazard reduction plan, and wildland fire prevention is necessary. These fire management activities would likely result in short-term impacts on recreation users and areas in the form of temporary closures, presence of large equipment, or temporary aesthetic effects from prescribed burns. Once areas were reopened, new routes established through fire management activities could create access to additional recreational opportunities unless BLM closed or rehabilitated roads or access points open for fire activities. Long-term impacts on recreation could occur in areas where fires are not suppressed and incur burnouts. Mosaic burn patterns that are historically prevalent in northern Idaho could also add to the natural setting of a recreation experience and could improve forage for and viewing of wildlife. Lake and streamside camping areas are often not burned and would not likely be impacted.

The action alternatives (Alternatives B, C, and D) allow for consideration of fire use outside of the WUI. This could affect roaded natural and semiprimitive areas. Impacts could include a change in the recreation setting and experience due to smoke, a burned landscape, or elimination of a dispersed recreation site.

Impacts from Cultural and Paleontological Resources Management

Under all alternatives, measures for cultural and paleontological resources would protect these resources of interest to the recreating public. These measures also could lead to restricting the development of recreational facilities and opportunities. Management actions that develop interpretive signage, informative maps, and cultural resource plans would enhance recreational experiences through education. Under Alternative A, motorized travel (including snowmobiles) is limited to designated roads on 2,870 acres to protect cultural values, thus limiting motorized recreation opportunities. However, under the other alternatives, motorized travel (except snowmobiles) is limited to designated roads and trails in all areas that are not closed. For snowmobiles, the 2,870 acres of limited area from Alternative A carry forward into Alternatives B and D. No off-road snowmobile use is allowed under Alternative C, but this restriction is not directly related to cultural resources.

Impacts from Visual Resources

No impacts on recreation resources would occur under any alternatives because the visual resource management (VRM) classes are in agreement with the recreation opportunities and objectives. Visual resource management is a byproduct management strategy of the other resource management objectives in the area.

Impacts from Forestry and Woodland Products Management

Impacts are the same as under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Mineral Management

Mineral development could create both long-term and short-term impacts on recreational resources by changing the natural setting to a more developed one during exploration and development activities. The impact would depend on the location of any exploratory and development activities. The potential for impacts would be related to the area available for exploration and development. Currently (Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres, while Alternative D proposes to withdraw only an additional 27 acres. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more impacts on recreation than Alternative C.

Impacts from Renewable Energy Management

Development of wind energy could permanently reduce the area currently available for recreational use, and would have long term impacts on visual quality and recreational experience due to wind turbines, power lines, and roads. Limitations on wind development would be related to ROW and use authorizations and are described under Impacts from Lands and Realty. Impacts from biomass utilization are the same as those described under Impacts from Vegetation – Forests and Woodlands.

Impacts from Transportation and Travel Management

Impacts on motorized and nonmotorized recreation occur when access changes. When motorized access is reduced or limited, this can increase opportunities for nonmotorized travel without conflicting experiences. Also, when certain types of nonmotorized travel are restricted, this can increase opportunities for other types of nonmotorized travel without conflicting experiences.

Alternative A: This alternative would continue to allow off-road motorized vehicle use, except where restrictions have been established to address specific resource management problems or conflicts. Motorized travel designations are as follows:

- Open designation: 63,041 acres;
- Limited designation: 33,567 acres; and
- Closed designation: 162 acres.

Alternative A would continue to allow cross-country snowmobile travel in areas designated as open, which could cause conflicts with other users, including cross-country skiers. Approximately 66,000 acres of area would be available for cross-country snowmobile use, although not all acres are accessible. About 30,600 acres are closed to cross-country snowmobile use. Travel restrictions on mechanized nonmotorized forms of travel would also continue, causing an impact on mountain bikers who may prefer to ride in this area.

This alternative would continue to prohibit equestrian use at the following developed recreation sites:

- Mineral Ridge Trail (3.3 miles);

4. Environmental Consequences

- Beauty Bay Trail (.4 miles);
- Blackwell Island Boardwalk (.5 mile); and
- Gamlin Lake Trail (4.3 miles).

Alternative B: Motorized travel designations are as follows:

- Open designation: 0 acres;
- Limited designation: 96,608 acres, and
- Closed designation: 162 acres.

The open designation would be eliminated, which would echo the alternative's management emphasis. This action would allow the BLM to actively manage about 63,200 more acres than under Alternative A, which is about 282 miles of roads and trails.

The roads and trails would limit motorized travel by season and by vehicle class type. These limitations would alter some recreation users' experiences by limiting motorized opportunities, but other recreation users may find the nonmotorized routes more enjoyable. The closed area would remain the same.

About 64,157 acres would be available for cross-country snowmobile use during the winter (not all acres are accessible). The closed areas would encompass about 33,400 acres, which include, but are not limited to, WSAs, Rochat Divide roadless area, Coeur d'Alene Lake and Gamlin Lake SRMAs, and developed recreation or administrative sites. About 3,000 acres, a slight decrease from Alternative A, would change from open designation for cross-country snowmobile use (as in Alternative A) to closed designation, though some of these areas may not be accessible. Under this alternative the BLM would apply cross-country travel restrictions to mechanized nonmotorized forms of travel the same as for snowmobiles. This action also would slightly decrease the area in which users could travel cross-country on mechanized nonmotorized vehicles.

Equestrian use would be limited, the same as Alternative A for Mineral Ridge Trail and Beauty Bay Trail, but Alternative B would also prohibit mountain biking in these areas. The mileage prohibiting equestrian use and mountain biking would be limited to 0.25 mile, less than under Alternative A.

Equestrian use and mountain biking would be allowed at Gamlin Lake Trail.

Alternative C: Motorized travel designations are as follows:

- Open designation: 0 acres;
- Limited designation: 96,459 acres; and
- Closed designation: 311 acres.

The open designation would be eliminated, as in Alternative B. This alternative would allow the BLM to actively manage about 63,000 more acres in the limited designation, which contains 122 miles of roads and trails. Areas closed to motorized travel would increase by 149 acres.

No cross-country snowmobile use would be allowed. The impact of this action would be to allow snowmobile use only on designated snowmobile routes. Banning cross-country snowmobile use and use of mechanized nonmotorized forms of travel would benefit those who desire solitude or nonmechanized

recreation, such as for cross-country skiing, snowshoeing, or hiking, but it would greatly reduce the amount of area available for snowmobilers and mountain bikers.

Equestrian uses would be restricted the same as in Alternative A, but Alternative C would also prohibit mountain biking along Mineral Ridge Trail, Beauty Bay Trail, and 0.25 mile of Blackwell Island Boardwalk. This would limit the amount of trail available to equestrian and mountain bike users under this alternative.

Alternative D: Motorized travel designations are as follows:

- Open designation: 0 acres;
- Limited designation: 96,139 acres; and
- Closed designation: 631 acres.

The open designation would be eliminated, which would echo the alternative's management emphasis. This action would allow the BLM to actively manage all of the public lands. Impacts of this alternative on recreation are similar to Alternative B, although this alternative would provide slightly less limited areas and cross-country snowmobile areas.

Impacts from Lands and Realty

Lands identified for adjustment could lead to a long-term impact on recreational users by decreasing or increasing the area of public lands available for recreation, or lands that provide access for recreation. Under Alternative A, only 325 acres of 3,249 within SRMAs are within the boundary of the area identified for retention and acquisition. This makes the majority of managed acres available for exchange, or other adjustment. All of the other alternatives include all of the SRMAs within the retention and acquisition boundary. Alternatives B and D specifically identify SRMAs as a retention and acquisition criteria. Alternative C identifies areas for primitive recreation as a criterion.

Activities associated with ROW and use authorizations (e.g., road construction and commercial use, development of facilities, etc.) can also impact recreation by limiting access, or interfering with recreational experiences. Under current management, there are no areas that would be categorically excluded or avoided for such authorizations, so impacts could potentially occur anywhere. The action alternatives (Alternatives B, C, and D) identify exclusion areas where authorizations would not be allowed, and avoidance areas where authorizations would be granted only if there was no other practical location. Thus, most impacts under the action alternatives would occur in areas outside of the exclusion and avoidance areas: 51,548 acres for Alternative B, 28,678 acres for Alternative C, and 67,033 acres for Alternative D.

Impacts from Special Designations Management

Areas with special designations would be managed in a way that would restrict certain recreation activities, if such activities could jeopardize the resource values special to the area. The areas of special designation also could enhance the recreation program to provide and protect unique recreation opportunities.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. There would be opportunities for only primitive recreation in these areas. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where recreational activities are already very limited. Thus, designation of the Lund Creek RNA would not affect recreation, unless the WSA was released by Congress. Indefinite protection would be provided for five stream segments, totaling 28 miles (3,495 acres of protected lands

4. Environmental Consequences

within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation. Segments include 14 miles of the Kootenai River which is eligible for recreation designation. However, BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer) along this segment, and very limited opportunities for recreation. Eligible streams also include a segment of the Little North Fork of the Clearwater (1.1 miles) which is eligible for recreation designation. Of the remaining protected segments, all but 0.3 miles fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments has little impact on recreation, unless the WSA was released by Congress.

Alternative B: ACECs are the same as under Alternative A. However, all stream segments that are eligible WSR were found nonsuitable under this alternative, and would receive no special protection.

When released by Congress from further study as a WSA, the Selkirk Crest area in would fall within the ERMA.

If it is released by Congress from further study as a WSA, the Crystal Lake area would fall within the semiprimitive motorized ROS part of Rochat Divide/Pine Creek SRMA.

If released by Congress from further study as a WSA, the Grandmother Mountain area would fall within the ERMA. The Lund Creek area would remain an RNA/ACEC. This action would protect valuable recreation and natural resource values that enhance the recreation setting in the Grandmother Mountain area.

The National Recreation Trail (NRT) designations for the Mineral Ridge and the Marble Creek trail system would continue, and additional routes would be nominated for designation:

- Beauty Bay Trail, 0.4 mile;
- Blackwell Island Boardwalk, 0.25 mile; and
- Gamlin Lake Trails, 4.3 miles.

This action would increase the mileage of trails in the NRT system and would provide improved opportunities for nonmotorized recreation.

Under this alternative the Watchable Wildlife Viewing Areas in Alternative A would continue to be recognized; Blackwell Island and Blue Creek Bay would be added as viewing areas, increasing the recreation opportunities for wildlife viewing.

Alternative C: This alternative would designate 19 additional ACECs, totaling an additional 23,275 acres. However, because 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, there would be little impact on recreation unless the WSAs were release by Congress (see discussion below). Of the remaining acres, 119 would be within ACECs designated to protect the public from hazardous materials (mine tailings). This would enhance recreational experiences by increasing safety. Also, all five eligible WSR segments were found suitable under this alternative, affording them the same protection as under Alternative A.

If released by Congress from further study as a WSA, the Crystal Lake area would become part of the Rochat Divide ACEC, which would further protect special values that enhance the semiprimitive recreation setting.

If released by Congress from further study as a WSA, managing the Grandmother Mountain area in the semiprimitive motorized Widow Mountain SRMA would allow vehicles to use designated routes. This area

would be managed as the Lund Creek RNA/ACEC and Little North Fork Clearwater ACEC. This alternative also finds the Little North Fork Clearwater River and tributaries suitable for WSR designations. Management of these river segments would protect the recreational setting.

The NRT impacts would be the same as Alternative B, except an additional 3.2 miles of the Crystal Lake Trails would be added to the NRT system.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. The primary impact on recreation would be a slight enhancement of primitive recreation that might occur in the vicinity of one of the ACECs. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

When released by Congress from further study the BLM would manage the WSAs (21,637 acres) for multiple uses consistent with resource goals of Alternative D. This would allow activities, such as hiking and nonmotorized travel, to take place that could harm the resources that were, in part, originally responsible for designating the areas as WSAs; however, fewer activities would be allowed under Alternative D than Alternative B.

Impacts involving Watchable Wildlife Viewing Areas would be the same as Alternative B.

Impacts involving National Recreation Trails would be the same as Alternative C.

Impacts from Socioeconomic Resources Management

Under all alternatives, recreation resources would be improved by site cleanups, rock dump stabilization, and site restrictions, which would occur under all alternatives. Restoring areas and improving site conditions would enhance the recreation setting and may attract recreation uses in formerly undesirable areas. Conversely, recreation users could be exposed to hazardous waste sites or abandoned mine sites that either remain unidentified or have not been remediated.

4.3.4.3 Cumulative Effects

Generally, all recreation will continue to increase as the area population increases and the availability of desirable recreational opportunities increases. The population of Idaho has risen 28.5 percent in the last decade; Populations in each of the five counties within the planning area are also projected to increase from approximately 20 percent (Benewah County) to approximately 39 percent (Bonner, Boundary, and Kootenai Counties). Overall, the 36 percent population growth over the next 20 years in the planning area is expected to exceed the projected 35 percent statewide growth (US EPA 2004a). This growth is likely to increase demand for dispersed and developed recreation sites.

Potential impacts on recreation would result primarily from surface disturbance actions. These impacts would primarily result from minerals development (most likely salable minerals and locatable minerals) that would detract from certain types of recreational experiences through increased roads, industrial traffic, noise, and scenery degradation associated with industrial development. Short-term impacts would result from vegetation treatment by creating temporary closures and displacing recreational users from developed areas. While much of the increased access would be desirable to groups of recreationists seeking motorized or mechanized options, opportunities for those seeking primitive and solitary experiences would be minimized. Wildland fire and vegetation treatment is another ongoing surface disturbing activity, but could improve forest, riparian,

4. Environmental Consequences

wetland, and nonforested vegetation conditions, aesthetics and wildlife habitat in the long-term resulting in recreational benefits.

Cumulative impacts on recreation resources would also be caused by activity and location restrictions to protect fish, wildlife and water quality, which could limit the areas in which recreation opportunities are allowed to expand. Short-term impacts would be caused by seasonal closures, but long-term impacts would result when closures changed the type of recreation opportunities available to the public. Development and restrictions could reduce recreational opportunities for some users by limiting certain types of recreational activities; however, the same restrictions, such as road closures, could also enhance the experience of other recreationists seeking nonmotorized opportunities in a natural setting.

Under Alternatives B and D, cumulative impacts on recreation would increase compared to Alternatives A and C because of increased development activities and fewer restrictions placed on sensitive resources. Cumulative impacts on recreation would also increase under Alternative B and D in regard to public health and safety concerns as a result of additional roads and associated conflicts between users. Indirect cumulative impacts on recreation would potentially occur because of reduction in or substantial impacts on, wildlife habitat creating a long-term reduction in recreation opportunities. Under Alternative C, impacts on recreation would be less than those of Alternatives A, B, or D because of less development activities, increased land resource protections, and decreases in oil and gas development. Most of the identified impacts under Alternative C would benefit recreation management and primitive types of recreation. Under Alternatives B, C, and D motorized recreation access would be more regulated, as “open” vehicle designations would be changed to “limited.” This is a national and regional trend that cumulatively reduces motorized recreation opportunities. However, the cumulative effect of the BLM’s action would be negligible because the 63,041-acre change does not prohibit motorized recreation uses and the amount of land affected represents less than four percent of the federal lands in the planning area.

4.3.5 Renewable Energy

4.3.5.1 Methods of Analysis

Impacts on the development of geothermal energy would be the same as those discussed in section 4.3.3. Management actions could result in impacts on renewable energy management if any management actions were to directly or indirectly change the quantity and availability of renewable resources such as biomass or were to place restrictions on construction of facilities. Indicators that are used to quantitatively and qualitatively assess management changes that could affect renewable energy management include the following:

- Acres of land open to biomass or wind energy development
- Availability of biomass fuel from logging activities
- Areas where biomass or wind energy development would have restrictions

4.3.5.2 Impacts

Impacts from Air Quality, Soils, and Water Quality Management

Under all alternatives, BMPs and road construction guidelines would have to be followed to minimize effects on air quality, soils, and water quality. This could increase costs, or make some areas off limits to wind energy development and biomass removal.

Impacts from Vegetation-Forests and Woodlands Management

Under all alternatives, vegetation and fuels reduction treatments would generate logging byproducts that could be used as biomass fuel. The quantity would correspond with the number of acres treated. Alternative A calls for treatment of 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C calls for an 83 percent reduction, while D calls for a 17 percent increase. There would be no impact on the development of wind energy.

Impacts from Fish and Wildlife, and Special Status Species Management

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) would only allow placement of biomass or wind energy facilities or extraction of biomass fuels in 12,869 acres of riparian buffer areas if project specific assessment revealed that there would be no adverse effect on listed species and if placement of the facility could be shown to have no effect on the RHCAs/RCAs. Fuel wood and biomass would only be removed from buffers if catastrophic conditions arose, including extensive blowdown, large scale and/or high impact stand replacing fire, or extensive loss to insects.

Impacts from Visual Resources Management

Neither biomass operations nor wind energy development would be allowed within VRM I areas (WSAs), under any alternative. Within VRM II areas, only small changes to the characteristic landscape that do not attract attention would be allowed. This would limit vegetation removal for biomass, and placement of wind turbines. It would also place extra restrictions on road and power line placement and construction. Potential for impacts would correspond with the number of acres designated VRM II. Alternatives A and B designate 14,312 acres. Alternative C designates 42,273, and Alternative D designates 23,551.

Impacts from Lands and Realty Management

Lands and realty management actions involve designating ROW exclusion areas that would be closed to possible development by biomass or wind energy facilities, and ROW avoidance areas where facilities would

4. Environmental Consequences

only be allowed if no other practical location could be found. The amount of designated ROW exclusion areas under any alternative would be directly related to the potential for this impact to occur. Current management does not specify any specific restrictions on ROW authorizations. Under Alternative B, 46 percent of BLM lands are within exclusion or avoidance areas. Under Alternative C, 71 percent of BLM land is within these areas, and 37 percent under Alternative D.

Impacts from Special Designations Management

Development of renewable energy facilities would either not be allowed, or special restrictions would apply in areas with special designations including ACECS, RNAs, WSAs, and WSRs.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Facilities and operations for renewable energy would not be allowed within these areas. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where facilities and operations are already not allowed. Thus, designation of the Lund Creek RNA would not have an impact, unless the WSA was released by Congress. Indefinite protective management of five stream segments totaling 28 miles, which are eligible for WSR designation, would limit facilities and operations within 1/4 mile of the eligible segments. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer). Of the remaining protected segments, all but about 1.5 miles (300 acres of buffer) fall within the Grandmother Mountain WSA, so there would be no added restrictions, unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would restrict facilities and operations as described for Alternative A. However, Alternative B identifies all eligible WSR segments as nonsuitable. Therefore they would not receive special management attention.

Alternative C: This alternative would designate 19 additional ACECs, totaling an additional 23,275 acres where facilities and operations would be restricted. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional impact would truly occur, unless the WSAs were released by Congress. Also, all five eligible WSR segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in impacts on biomass and wind energy development. WSR segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

4.3.5.3 Cumulative Effects

Cumulative effects of biomass would be similar to those discussed in Section 4.3.1.3 for Forestry and Woodland Products. Cumulative effects of geothermal energy would be similar to those discussed under Minerals in Section 4.3.3.3. Cumulative effects of wind energy would be similar to those discussed in Section 4.3.7.3 under Lands and Realty.

4.3.6 Transportation and Travel Management

4.3.6.1 Methods of Analysis

Management actions could result in impacts on transportation and travel management if any management actions were to directly or indirectly change the availability of opportunities. Acres of proposed management activities, including withdrawals, timing constraints and surface disturbances, are evaluated and compared for each alternative. Indicators for transportation and travel management include:

- Acres of travel designation (open, limited, closed) indicate change in transportation and travel management.
- Changes in miles of developed roads (either increases or decreases),
- Changes in types of use (motorized versus nonmotorized); and
- Possibility of temporary closures.

4.3.6.2 Impacts

Impacts from Transportation and Travel Management

Objectives and actions that specify closures and limitations on travel are the result of identified needs to protect other resources. Table 4.3.6-1 below shows changes from current management for motorized travel.

Table 4.3.6-1 Changes to Travel Management by Alternative				
Travel Designation	Current Management	Changes from Current Management		
	Alternative A	Alternative B	Alternative C	Alternative D
Open travel areas (acres)	63,041	-63,041	-63,041	-63,041
Closed travel areas (acres)	162	0	+149	+469
Limited travel areas (acres)	33,567	+63,041	+62,982	+63,572
Designated roads/trails (miles)	27	+255	+95	+148
Roads/trails with seasonal or vehicle restrictions (miles)	14	+99	+55	+54
Open to off-road snowmobilers (acres)	66,949	-2,792	-66,949	-3,576

The greatest difference between the action alternatives (Alternatives B, C, and D) and current management is that all of the current open area (65 percent of BLM land) becomes limited or closed. Also, most of the newly designated roads and trails under the action alternatives are within the area that is currently designated as open.

Impacts from Soils Management

Under all alternatives, managing soil-disturbing activities to protect landslide-prone areas and to minimize potential for mass wasting could force the BLM to place certain trails off limits to equestrians and motorized vehicle users during part or all of the year. This would result in a minor impact on travel and transportation access.

4. Environmental Consequences

Impacts from Water Resources Management

Under all alternatives, protecting and maintaining watersheds could require periodic or permanent road closures in cases where roads contribute to sedimentation of streams, mass wasting, or other forms of erosion. This action could remove or limit users' ability to travel within areas of concern.

Impacts from Vegetation—Forest and Woodlands Management

Future vegetation treatments could affect transportation by providing more roads that could be considered for designation into the travel management system, and would provide maintenance for existing designated roads during the time treatments are being implemented. Temporary closures of roads could be required for safety reasons during an active forest vegetation treatment project. Potential for and magnitude of these impacts would correspond with the number of acres treated. Alternative A calls for treatment of 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C calls for an 83 percent reduction, while D calls for a 17 percent increase.

Impacts from Vegetation—Riparian and Wetlands Management

Under all alternatives, protection and enhancement of riparian and wetland vegetation could result in temporary or permanent closure of roads and trails for rehabilitation, or relocation outside of the riparian area. Alternatives A, C, and D call for achieving 75 percent PFC of riparian and wetland areas. Alternative B calls for achieving only 50 percent PFC. Thus there could be slightly less potential for impacts under B than under other alternatives. See Impacts from Fish and Wildlife for a description of impacts from implementing INFISH (Alternative A) and CNFISH (Alternative B).

Impacts from Fish and Wildlife Management

Alternative A would institute INFISH, and Alternatives B, C, and D would institute CNFISH as guides to promote restoration of aquatic, riparian, and wetland habitats, including maintaining and restoring watersheds. INFISH and CNFISH require that management activities not degrade existing habitat in conservation subwatersheds or retard attainment of trends toward improving aquatic habitats in restoration subwatersheds. Impacts on these resources would be analyzed with each expansion or improvement activity to the transportation system. A watershed analysis would be completed before new roads could be built within an RHCA/RCA. This additional analysis may prolong the development of small-scale improvements to the transportation system. Any roads that are causing impacts on riparian habitat would have to be repaired, relocated, or closed.

All alternatives also require new roads and improved roads that have stream crossings to be built to standards that would endure a 100-year flood. The short-term impacts of this requirement on transportation would include temporary closure of sections of the travel network, possibly in heavily traveled areas. Protecting the users of the transportation network from a crossing failure would be a long-term effect.

Alternative A: Roads in crucial and important winter range for deer and elk would continue to be closed to public vehicular access for four months each year. New roads would continue to be buffered. All roads, except main haul roads in heavy use, fawning, rut, and lick areas would be closed to public vehicular access for eight months each year. These actions would restrict locations of new roads to avoid sensitive deer habitat and restrict the travel network connectivity and access during the main visitor use period (spring, summer, and fall).

All dead-end roads and roads that the BLM expects to use for five years or less would continue to be closed. There are no actions that address maintaining a specific road density for deer, elk or moose habitat. There are no actions that address specific recovery activities to protect the grizzly bear population.

Action Alternatives (Alternatives B, C, and D): All newly constructed roads would be closed and partially obliterated when the road is no longer needed. This action would limit motorized transportation on the road network but may present opportunities for closed roads to become hiking trails. Under Alternative C, BLM would also reduce (through decommissioning) or limit open road densities to one mile of road per square mile or less, outside of urban or rural areas, for deer, elk, or moose habitat protection. A reduction in the road and trail system could lead to more of a demand on the existing transportation system and possibly conflicts between road and trail users. More demand on a shrinking transportation system would also increase the need for trail and road maintenance.

Impacts from Special Species Management

Impacts from INFISH/CNFISH are addressed under Impacts from Fish and Wildlife. Under current management, complying with ESA and BLM policy regarding special status species could impact travel through road closures, relocation, or seasonal restrictions. However, there are no specific objectives or actions under current management which would affect travel.

Action Alternatives (Alternatives B, C, and D): Requiring road building to be compatible with grizzly bear habitat requirements would restrict the areas where new roads in the network, including temporary roads, could be located, and would apply to 3,603 acres of grizzly bear habitat.

Within lynx areas there would be no new designated snow play areas or snow compaction activities (groomed trail). These activities would limit snowmobiling opportunities on 28,757 acres.

Although the objectives and actions are slightly different from Alternatives B and C, impacts on travel would be the same.

Impacts from Wildland Fire Management

Road closures in times of severe fire danger would temporarily limit access, reducing travel opportunities. However, these closures would help to protect those who use the roads and trails, though temporary opening of roads/access for fire management activities could be necessary.

Impacts from Cultural Resources Management

There are 5,353 acres designated limited for all motorized vehicles (including snowmobiles) to protect cultural resources under Alternative A. Under the action alternatives (B, C, and D), motorized vehicles (except snowmobiles) would be limited to designated roads on all BLM lands that are not closed to motorized use. This is not directly related to cultural resources. However, under Alternatives B and D, snowmobiles would be limited to designated roads to protect cultural resources on the same 5,353 acres specified under current management. Under alternative C, no off-road snowmobile use would be allowed on any BLM land; however, this restriction is not directly related to cultural resources.

Impacts from Visual Resources Management

Construction and location of roads and trails could be impacted by VRM Class II designations. Only small changes to the landscape are allowed within areas classified as VRM II. The potential for impacts would correspond with the total area classified as VRM II within each alternative: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations). VRM I only occurs in WSAs where interim management would be as strict, or even stricter than VRM objectives.

4. Environmental Consequences

Impacts from Forest Products Management

Impacts are described under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from Minerals Management

Similar to forest vegetation treatments, mineral development can result in construction of new roads or maintenance of existing roads. Currently (Alternative A) and under Alternative B, there are 5,376 acres withdrawn from mining. Alternative C proposes to withdraw an additional 24,370 acres. Alternative D proposes to withdraw only an additional 27 acres over current. Thus Alternatives A, B, and D would allow more opportunity for mineral development with correspondingly more opportunities for road construction and maintenance than Alternative C.

Impacts from Recreation Management

All alternatives would limit motorized vehicle access to designated routes in the Coeur d'Alene Lake SRMA and the Lower Coeur d'Alene River SRMA (or Killarney Lake SRMA in Alternatives C and D). Motorized boating would also be prohibited in Blackwell Canals, outside of the boat launch area.

Alternative A: Recreation opportunities, including those associated with OHVs, motorbikes, bikes, hiking, horseback riding, boating, and snowmobiling, would continue to be managed on the existing road and trail network. Under this alternative, BLM would manage three SRMAs (3,249 acres), in which the trail and road network may be reduced or expanded if the activities were consistent with recreation objectives. Most of the public lands would be under custodial management in the ERMA, in which the road system could expand to serve the management objectives of other resources.

Alternative B: Improvements to the motorized and nonmotorized transportation system are planned under Alternative B. Under this alternative 63,927 acres (66 percent of BLM land) would be managed in SRMAs.

Several nonmotorized trails would be planned for the Blue Creek Bay and Loff's Bay area, including an upland nonmotorized trail system in Blue Creek Bay and a day-use picnic site, trail, and wildlife viewing area in Loff's Bay. In addition, trails would be constructed in the Cougar Bay Wildlife Viewing Area. A paved access road with six parking stalls would be constructed. This action would increase the access to Cougar Bay and increase the mileage of nonmotorized trails in the Coeur d'Alene Lake SRMA.

Gamlin Lake SRMA would be managed for local residents to engage in day-use nonmotorized trail or water-related activities. Nonmotorized recreation is emphasized, so improved road access to developed recreation sites would not be an action in this alternative. Motorized vehicles would be limited to designated developed roads, as in Alternative A. Under this alternative, though, some trails would be open to equestrian use and other trails would be closed. This action would allow limited opportunity for equestrian travel.

In the Rochat Divide/Pine Creek (backcountry motorized zone) SRMA, improvements would be made to roads that access trailheads and primitive road and trail recreation routes through the area. Motorized vehicles would be limited to designated routes. Motorized single-track trails would be limited to two-wheeled vehicles only. The Middle Fork Pine Creek Road would not be maintained but would be managed as a challenging four-wheel drive vehicle trail. This action would work to improve the condition of existing roads and trails that allow the most access to recreation. Four-wheel drive vehicle access would be emphasized in certain areas but limited to roads and designated double-track trails.

In the Rochat Divide/Pine Creek (backcountry motorized zone) SRMA, easements would be required to provide a continuous trail route along the Coeur d'Alene St. Joe Divide from the Rochat Divide Road to the

National Forest boundary. It would be managed as a motorized route, except that portion within the Crystal Lake WSA. However, if the WSA were released from further congressional consideration, then motorized use of this trail would be allowed within the WSA area. This action would increase the mileage of motorized trails in the FO and would increase the access within the FO for motorized users.

In the Rochat Divide/Pine Creek (backcountry nonmotorized zone) SRMA, primitive road access would be provided to trailhead facilities and trail access through the area. Motorized vehicles would be limited to designated travel routes, and motorized single-track trails would be limited to two-wheeled vehicles only. The Crystal Lake Trail from Sheep Springs would be closed to equestrian and mechanized uses. Overall motorized travel in this area of the SRMA would be more limited than under Alternative A.

In the Silver Valley SRMA, paved and improved road access would be provided to developed sites and other areas, and trails would be provided to access recreation facilities. Motorized travel would be limited to designated routes. This action could increase the mileage and condition of the existing road and trail network in the Silver Valley area.

In the Huckleberry SRMA, a road system would be developed around the campground, but motorized travel would be limited to designated routes. This action would increase visitor access to this SRMA.

Alternative C: This alternative would manage recreation areas for dispersed uses and undeveloped areas and would not encourage the creation of more motorized roads or trails. Under this alternative, 60,866 acres (63 percent of BLM lands) would be managed within SRMAs.

Travel management activities in the CdA Lake SRMA would be the same as under Alternative B. Travel management in Gamlin Lake SRMA would be similar to Alternative B, except that all trails would be open to equestrian use. This action would allow the greatest opportunity to travel trails by horse in this SRMA.

Travel management in Rochat Divide SRMA backcountry motorized area would be similar to Alternative B, except that the Middle Fork Pine Creek Road would not be designated as a motorized travel route, thereby providing fewer miles for motorized uses. The Rochat Divide SRMA backcountry nonmotorized area would have the same impacts as Alternative B.

In the Widow Mountain SRMA, road access to trailheads and improved trail access would be provided throughout the area. Motorized travel would be limited to designated routes. Motorized single-track trails would be limited to two-wheeled vehicles. This alternative could increase the mileage and condition of the existing transportation network in the Widow Mountain area.

The Silver Valley Area and the Huckleberry Campground would be managed in the ERMA, as under Alternative A, and would not place management activities toward expanding the roads and trails for recreation in this area.

Compared to Alternatives A and B, the general impact of recreation management on travel and transportation would be development of lower impact, dispersed nonmotorized transportation resources, a reduction in access to motorized uses, and a proportionally greater volume of traffic on roads that remain available for motorized vehicles.

Alternative D: Under this alternative, the FO would manage seven SRMAs that total 79,151 acres, which would make up about 82 percent of the FO. The percent of land in SRMAs would be the highest under this alternative. This management strategy would protect the most acreage to be managed toward recreation-

4. Environmental Consequences

related goals and objectives to provide the most recreation opportunities for users. Impacts of this management strategy would be that the transportation system would be maintained and expanded to meet related recreation goals. Alternative D would protect the most miles of recreation-related transportation than any other alternatives.

Custodial management would still occur on the ERMA, but the percentage of land in the ERMA would be the lowest under this alternative (18 percent). Effects of this would be that resource development-related activities, such as mineral exploration and timber harvest, would be less likely to create expansion of the transportation system than under the other alternatives.

Impacts from Renewable Energy Management

Under all alternatives, providing opportunities for development of renewable energy resources would require allowing access for facilities or for biomass removal. Such actions would require continued use or expansion of the existing travel network, requiring a greater number of roads.

Impacts from Lands and Realty Management

Current management of land retention and acquisition is primarily based on a geographic boundary. However, consolidation and improved public access is always considered during land acquisitions or adjustments. Under the action alternatives (Alternatives B, C, and D), public access is identified as a criterion for retention and acquisition, which would increase emphasis and the potential for improving the travel and transportation network.

Also, unlike current management, the action alternatives identify rights-of-way (ROW) and use authorization restrictions by designation of ROW exclusion and avoidance areas. No authorizations (e.g., new roads, commercial road use and maintenance) would be allowed within the exclusion areas. Authorizations would only be granted within the avoidance areas if there was no practical alternative. Thus the opportunities for development of new roads, and maintenance of existing roads would be primarily restricted to areas outside of exclusion and avoidance areas. Under Alternative B, 46 percent of BLM lands are within exclusion or avoidance areas. Under Alternative C 71 percent of BLM land is with these areas, and 37 percent under Alternative D.

Impacts from Special Designations Management

Under all alternatives, the National Recreation Trail (NRT) would continue to be managed and maintained in Mineral Ridge and Marble Creek. The transportation system associated with the Watchable Wildlife Viewing Areas would continue to be managed and maintained in good condition. Alternative B would add 5 new miles, and C would add 8 new miles of NRT. These designations would increase emphasis on maintenance on these routes.

Under all alternatives, special designations would be managed in a way that would restrict certain motorized and nonmotorized activities, if these activities would jeopardize the resource values special to the area. Under Alternatives C and D, Farnham Forest and Hideaway Islands ACEC/RNAs would be closed to motorized vehicles. Under Alternative C, Morton Slough ACEC would also be closed. However, closure of these small unroaded areas (148 acres for C, and 33 Acres for D) would have negligible impact on travel.

Impacts from Social and Economic Management

Health and Safety. Under all alternatives, activities related to cleanup, remediation, and closure of contaminated or hazardous sites could result in the temporary or permanent closure of roads and trails to prohibit public access to

these hazardous sites, reducing the size of the transportation network. In addition, Alternative D closes all sites with significant known hazardous materials (149 acres) to motorized travel.

4.3.6.3 Cumulative Effects

As discussed under Section 4.3.4, *Recreation*, population growth in the planning area and statewide is increasing. From 1999 to 2003, motorbike and ATV registrations experienced an increase of approximately 88 percent and snowmobile registrations increased 13 percent from 2000 to 2004. From 1993 to 2003, annual recreational vehicle registrations in Idaho also increased by almost 16,000, now totaling 87,000 registrations per year (Idaho Department of Transportation 2005).

Potential impacts on transportation and access would result from various land use restrictions such as sensitive resource and wildlife areas that would limit public access and use within the CdA FO. Impacts on transportation and access would also result from developing commodities such as timber or minerals, which would expand the mileage of roads for access to development activities.

Cumulative effects on transportation and access within the planning area would result from land use restrictions from BLM, FS, and the State of Idaho. For example, wildlife habitat protections could limit access to adjacent areas of federal (BLM or FS) and state lands. Alternative A would contribute the least to cumulative effects because most BLM land would remain open to off-road vehicle use, and there are no ROW exclusion or avoidance areas. Alternatives B and D would contribute to cumulative effects due to the designation of all lands as limited to designated roads for wheeled OHVs. These two alternatives would also designate ROW exclusion and avoidance areas. Alternative C would contribute the most to cumulative effects because it has similar impacts on B and D, and because no off-road snowmobile use would be allowed.

As the US Forest Service revises its management plans, activities that are restricted or permitted could affect transportation and travel management. Forest Service planners are reviewing inventoried roadless areas, which are generally managed for low development and resource protection and enhancement. If the Forest Service were to close inventoried roadless areas to motorized recreation, then displacement would occur and an increased demand for motorized recreation on public lands could shift to BLM-managed lands.

Changes to route designations on BLM and US Forest Service lands, in addition to accessibility through private parcels, would affect recreationists by altering and possibly restricting motorized vehicle access to areas. If the Idaho Panhandle National Forest Revision restricts OHV use then available OHV opportunities in the area would be cumulatively reduced, when considered with OHV open area reductions or eliminations on BLM lands.

Development on and surrounding public lands and certain restrictions as result of development could reduce long-term recreational opportunities for some user groups (such as OHV users); however, the same development and restrictions, such as route designations, could expand recreational opportunities of other users seeking more primitive experiences.

4. Environmental Consequences

4.3.7 Lands and Realty

4.3.7.1 Methods of Analysis

Management actions could result in impacts on lands and realty management if any management actions were to change the acres of lands in federal ownership, change the extent of withdrawals, or change the way that ROWs or permits are managed or authorized. However, no withdrawals from the land laws (closure to surface entry) are proposed under any alternative.

Indicators that were used to quantitatively and qualitatively assess management changes that could affect lands and realty management include the following:

- Acres and criteria of land tenure adjustment (retention and adjustment)
- Designation of ROW utility corridors
- Acres available for rights-of-way (would include all lands that are not part of exclusion areas)

4.3.7.2 Impacts

Impacts from Lands and Realty Management Land Tenure Adjustment.

Under current management, 26 percent of the land managed by BLM is available for exchange or adjustment. Under Alternatives B and D, 10 percent would be available, and under Alternative C, 25 percent would be available. Thus Alternatives A and C have the potential for greatest loss of land area to federal ownership. Action alternatives (Alternatives B, C, and D) designate ROW corridors, which would serve to concentrate the locations of future ROWs. Alternative A has no such ROW corridor designations.

Rights-of-Way.

Alternative A: There are no designations of rights-of-way corridors across the planning area under Alternative A.

Alternative B: This alternative would involve 21,636 acres (22 percent of BLM land) of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres (24 percent of BLM land) of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. ROWs and use permits would be concentrated in the remaining 51,548 acres (54 percent of BLM land).

Alternative C: This alternative would involve 21,819 acres (23 percent of BLM land) of ROW exclusions and 46,273 acres (48 percent of BLM land) of ROW avoidance areas. The difference in exclusion areas from Alternative B is not substantial. However, the additional avoidance area means that authorizations would be concentrated on the remaining area of only 28,678 acres (29 percent of BLM land).

Alternative D: This alternative would involve 22,069 (23 percent of BLM land) acres of ROW exclusions and 13,688 acres (12 percent of BLM land) of ROW avoidance areas. Authorizations would be concentrated on the remaining 67,033 acres (63 percent of BLM land).

Impacts from Fish and Wildlife, and Special Status Species Management

INFISH (Alternative A) and CNFISH (Alternatives B, C, and D) calls for avoiding impacts on riparian habitat when issuing leases, permits, rights-of-way, and easements. Under the action alternatives (Alternatives B, C, and D) this would be accomplished primarily through designation of 9,099 acres of riparian habitat (9 percent of BLM land) as ROW avoidance areas. INFISH and CNFISH also call for use of land acquisitions, exchange, and acquisition easements to enhance riparian and aquatic habitats and native fish populations. The action alternatives all identify some form of fish habitat (fishable under B, riparian and special status species under C, and riparian and threatened and endangered under D) as retention and acquisition criterion. In addition, Alternative B identifies habitat for fishable, trappable, and viewable wildlife as criterion. Alternatives C and D also call for retention of stands of late-seral forested habitats.

Impacts from Visual Resources Management

VRM Class I lands are within WSAs. See the Impacts from Special Designations for a description of impacts from WSAs. The action alternatives (Alternatives B, C, and D) designate all VRM II areas as ROW avoidance areas. Current management and Alternative B designate 14,312 acres as VRM II, Alternative C would increase this to 42,273 acres (a 195 percent increase over current designations), and Alternative D would designate 23,551 acres as VRM II (a 65 percent increase over current designations). The overall impact to lands and realty actions from visual resources would be to restrict lands and realty authorizations within VRM II areas. VRM III and IV areas would have no impact on lands and realty authorizations.

Impacts from Special Designations Management

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. This would limit ROW and other use authorizations within these areas. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where authorizations are already limited. Thus, designation of the Lund Creek RNA would not add additional restrictions, unless the WSA was released by Congress.

Indefinite protective management of five stream segments totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for WSR designation would similarly limit lands actions. However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer). Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments would not add notable restrictions, unless the WSA was released by Congress.

If Grandmother Mountain (11,893 acres) and Crystal Lake (9103 acres) WSAs are released from further study, the released areas would mostly be managed as VRM Class II, which would limit their availability for ROWs. Some areas would be managed as Class I because of other designations and because of those designations would likely be off limits to ROWs. If Selkirk Crest WSA (671 acres) is released from study, it would be managed as Class II; these lands, like Grandmother Mountain and Crystal Lake, would likely be of limited availability for ROWs.

Alternative B: Impacts from ACECs would be the same as Alternative A, except that the 2,981 acres are identified as ROW avoidance areas. All eligible WSR segments were found unsuitable under this alternative, and would have no impact.

If Grandmother Mountain, Crystal Lake, and Selkirk Crest WSAs are released from further study, they would be managed as VRM Class II; these lands would likely be of limited availability for ROWs. This would result in roughly the same impacts as under Alternative A.

4. Environmental Consequences

Alternative C: This alternative would designate 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional ROW exclusion areas would truly be afforded, unless the WSA was released by Congress. Four of the new ACECs (3,069 acres – 164 acres outside the WSA) would be ROW exclusion areas. The remainder (20,206 acres – 5,046 acres outside the WSA) would be ROW avoidance areas.

Also, all five eligible WSR segments were found suitable under this alternative, affording the same restrictions as under Alternative A, plus 2,671 acres (all within the WSA) would be ROW exclusion areas, and 823 acres (all outside the WSA) would be ROW avoidance areas.

If Grandmother Mountain and Crystal Lake WSAs are released from further study, the released areas would be managed as VRM Class I, which would limit their availability for ROWs, although they would not be officially excluded from ROW development. If Selkirk Crest WSA is released from study, it would be managed as Class II. This would mean it would be of limited availability for ROW development, although less restricted than the Class I areas.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in ROW exclusion areas. Wild and Scenic River segment protection is identical to Alternative C, with four suitable and one eligible segments.

Impacts from Social and Economic Conditions Management

Health and Safety. In accordance with current BLM policy (Alternative A) and as specified under the action alternatives (Alternatives B, C, and D) land containing hazardous materials would be available for transfer (adjustment or exchange) only to the party legally identified as responsible for site remediation and cleanup (the potentially responsible party); therefore, this would result in a slightly smaller amount of acreage available for adjustment. Public health and safety actions would limit the acres available for certain permitted uses, ROW use, and land tenure adjustment.

4.3.7.3 Cumulative Effects

Past, present, and reasonably foreseeable actions that make up the cumulative effects scenario affect lands and realty. Urban development would continue to restrict public lands by private landowners. Human activities, such as mining and timber harvesting, will continue to require issuance of permits and authorizations of ROWs. Private lands adjacent to public lands could contribute to maintaining larger areas for more efficient land management for various resources, including habitat management. Land exchanges would continue to consolidate public lands and facilitate land management. Counties within the planning area will begin to address growth in county development plans and other planning and zoning efforts, which should involve land management coordination with BLM.

4.4 SPECIAL DESIGNATIONS

4.4.1.1 Methods of Analysis

Management actions could result in impacts on special designations if any management actions were to directly or indirectly change the quantity and availability of the values that special designations are intended to highlight or protect.

4.4.1.2 Impacts

Impacts from Special Designations Management

Alternative A: BLM Interim Management Policy (IMP) would continue to be implemented within the three WSAs, so as not to impair their suitability for wilderness designation.

Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. Lund Creek RNA falls completely within the Grandmother Mountain WSA. The IMP would preclude most activities that could cause impacts on relevant and important values. Thus, continuing designation of Lund Creek RNA would have little impact, unless the WSA was released for multiple uses by Congress.

There would be no specific management intended to protect other areas found to have relevant and important values during the ACEC nomination evaluation. However, many of these values would receive protection through other resource management direction, including: INFISH, special status species management, old growth vegetation treatment objectives and actions, cultural resources management, travel management, or hazardous materials management.

Indefinite protective management of five stream segments totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for WSR designation would similarly protect outstandingly remarkable values (ORVs). However, eligible segments include 14 miles of the Kootenai River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer), and very little ability to protect values along the entire segment. Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA. Similar to the situation for Lund Creek RNA, protection of eligible segments within the WSA would have little impact, unless the WSA was released by Congress.

The following sites would continue to be recognized as Watchable Wildlife Viewing Areas: Lower Coeur d'Alene River, Cougar Bay, Gamlin Lake, and Wolf Lodge Bay. There would be no impacts on watchable wildlife viewing areas.

National Recreation Trail (NRT) designations for the Mineral Ridge (3.3 miles) and the Marble Creek trail system (45 miles), totaling 48.3 miles, would continue. There would be no impacts on national trails.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would protect relevant and important values as described under Alternative A, and would enhance this protection by making the areas right-of-way (ROW) avoidance areas (see Impacts from Lands and Realty). Impacts on values in areas not designated are the same as described under Alternative A.

Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention, and there would be no additional protection of the outstandingly remarkable values. However, CNFISH would provide some protection of the riparian habitat within these

4. Environmental Consequences

corridors. Protection of other areas found to have relevant and important values during the ACEC nomination evaluation would be identical to Alternative A.

When released by Congress from further study, the BLM would manage the WSAs (21,637 acres) for multiple uses consistent with resource goals of Alternative B. Without the application of the IMP, there would be potential for degradation of the wilderness characteristics for which the WSAs were originally designated. However many of these characteristics would be preserved indirectly through management direction for the Lund Creek RNA, Rochat Divide/Pine Creek SRMA, special status species habitat, and CNFISH.

The following sites would be recognized as Watchable Wildlife Viewing Areas: Blackwell Island, Blue Creek Bay, Lower Coeur d'Alene River, Cougar Bay, Gamlin Lake, and Wolf Lodge Bay, which would increase the number of watchable wildlife viewing areas. This would have long-term impacts by providing additional locations for watching wildlife.

Under Alternative B, the National Recreation Trail (NRT) designations for the Mineral Ridge and the Marble Creek trail system would continue. Additionally, the following routes would be nominated for designation: Beauty Bay Trail (0.4 miles), Blackwell Island Boardwalk (0.25 miles), and Gamlin Lake Trails (4.3 miles). This would increase the amount of national trails from 48.3 miles to 53.25 miles, which would have few long-term impacts.

Alternative C: This alternative would protect relevant and important values through designation of all areas found to have relevant and important values in the ACEC nomination evaluation. This would add 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs. Similar to Lund Creek under Alternative A, designation of areas within the WSAs would have no impact, unless the WSAs were released by Congress. The proposed Hideaway Islands, Lund Creek, and Farnham Forest RNAs/ACECs and Windy Bay ACEC (total of 3,085 acres – 180 outside the WSA) are ROW exclusion areas, and the remaining ACECs are ROW avoidance areas under this alternative (see Impacts from Lands and Realty).

Also, all five eligible WSR segments were found suitable under this alternative, affording them the same protection as under Alternative A, which would become permanent if Congress officially designates them as wild and scenic. Wild corridors are ROW exclusion areas, and other corridors are ROW avoidance areas under this alternative (see Impacts from Lands and Realty).

When released by Congress from further study, the BLM would manage the WSAs for multiple uses consistent with resource goals of Alternative B. Without the application of the IMP, there would be potential for degradation of the wilderness characteristics for which the WSAs were originally designated. However many of these characteristics would be preserved indirectly through management direction for the Lund Creek RNA/ACEC, Little North Fork of the Clearwater ACEC, Rochat Divide ACEC, WSR suitable segments, Rochat Divide/Pine Creek SRMA, Widow Mountain SRMA, special status species habitat, and CNFISH.

The impacts on Watchable Wildlife Viewing Areas would be the same as Alternative B.

Impacts from NRT designation would be the same as Alternative B, except a fourth trail (Crystal Lake Trail) that is 3.2 miles would also be nominated for national trail designation. This would increase the amount of national trails from 48.3 miles to 56.45 miles, which would have no long-term impacts.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford protection of relevant and important values. All ACEC/RNAs are ROW exclusion areas (see Impacts from Lands and Realty). Impacts on values in areas not designated are the same as described under Alternative A.

Wild and Scenic River segment protection is identical to Alternatives C, except no suitability determination was made for the Kootenai River segment. As under Alternative A, the eligible segment would be managed as a wild and scenic segment indefinitely, or until suitability determination is made.

When released by Congress from further study, the BLM would manage the WSAs for multiple uses consistent with resource goals of Alternative B. Without the application of the IMP, there would be potential for degradation of the wilderness characteristics for which the WSAs were originally designated. However many of these characteristics would be preserved indirectly through management direction for the Lund Creek RNA/ACEC, Wild and Scenic River suitable segments, Roach Divide/Pine Creek SRMA, Widow Mountain SRMA, special status species habitat, and CNFISH.

Impacts involving Watchable Wildlife Viewing Areas would be the same as Alternative B.

Impacts involving National Recreation Trails would be the same as Alternative C.

Impacts from Vegetation – Forests and Woodlands Management

Forest vegetation treatments under all alternatives have potential to impact many of the special values for which areas are identified for special designations. Impacts would primarily be from changes to the forest vegetation, construction of roads, and short-term increases in noise and human activities. However, designation of special areas, and management direction outlined for designations, either specified in the alternatives or from BLM policies (e.g., IMP for WSAs), would protect areas from impacts. Areas with special values that are not designated would be vulnerable to impacts. However these values are often directly or indirectly protected by other management direction including: INFISH/CNFISH, special status species management, old growth vegetation treatment objectives and actions, cultural resources management, travel management, SRMA management, or hazardous materials management.

Impacts from Special Status Species Management

Under all alternatives, management actions that protect sensitive species would compliment the protection of resources within special area designations. Special status species management direction also provides direct and indirect protection for values in areas that are not designated.

Impacts from Wildland Fire Management

Potential impacts from fuels treatments are described under Impacts from Vegetation – Forests and Woodlands Management. Alternatives A and B emphasize suppression to protect commodity resources, which could indirectly protect special values through suppression of fires in their vicinity. Alternative C emphasizes protection of noncommodity resources and Alternative D balances commodity and noncommodity resources. Both of these latter alternatives also call for use of MIST in special designation areas. MIST may or may not be applied in areas with special values that are not designated. Thus Alternatives C and D would provide more direct protection of special values than A or B. All of the action alternatives (Alternatives B, C, and D) identify areas where fire use would be considered. These areas are outside the WUI which is also where most areas with special values occur. Fire use has potential to allow vegetation to burn

4. Environmental Consequences

within areas with special values, which may degrade or possibly enhance the value and viability of the special designation. There are no fire use areas under current management.

Impacts from Livestock Grazing Management

Under Alternatives A and B, approximately 1,839 acres (Latour Creek Allotment) within the Crystal Lake WSA are allocated for grazing. However, this allotment is not currently leased, and would not be allocated for livestock grazing under Alternatives C or D. If it were to be leased, the Idaho Standards and Guidelines for Livestock Grazing Management would be enforced which would provide some protection for special values.

Impacts from Minerals Management

Mineral developments could degrade special values through road construction, vegetation and soil removal, mine waste, and mining equipment and activities. Currently, (Alternative A) and under Alternative B, only 1,165 acres within areas identified with special values are withdrawn from mining. Alternative C recommends withdrawals on all ACECs. Alternative D only proposes withdrawal of the Pulaski Tunnel. However, other than the Pulaski Tunnel, and the ACECs under Alternative C that would be designated to protect the public from hazardous mine wastes, the other areas with special values are within areas that have low potential for mineral development. Federal regulations require submission of a plan of development for BLM approval for mineral developments within ACECs and areas closed to motorized vehicles. The areas with hazardous materials identified for ACEC designation under Alternative C are identified as closed to motorized vehicles under Alternative D, affording BLM the same discretion for protecting the public from these hazards.

Impacts from Transportation and Travel Management

Under current management 3,276 acres of areas with special designations are open to off-road motorized vehicle use. This could result in degradation of special values, or increased hazard to the public in areas with hazardous materials. However, under the action alternatives (Alternatives B, C, and D) all BLM lands are designated as either limited (motorized vehicles may only use designated roads and trails), or closed (motorized vehicle use prohibited), thus there is little potential for related impacts. The only special values that off-road snowmobile use could impact are the cultural values in the Rochat Divide area. This area is closed to off-road snowmobile use under all alternatives.

Impacts from Lands and Realty Management

Lands identified for adjustment vary by alternative, but usually include small isolated parcels. Many of these parcels contain special values (e.g., Hideaway Islands, Farnham Forest, Kootenai River Front, and Windy Bay. Special designation areas are specifically identified for retention under the action alternatives (Alternatives B, C, and D). Since most areas with special values are also managed for other resources (special status species habitat, riparian habitat, special recreation management areas, etc.) they are usually indirectly identified for retention.

ROW and use authorizations usually involve road or facilities construction, maintenance, and use, which could degrade unprotected special values. ACECs/RNAs and Wild and Scenic River eligible and suitable segments are designated as ROW exclusion or avoidance areas under the action alternatives, which would minimize the potential for impacts. When areas with special values are not designated, they are vulnerable to impacts, unless other management direction protects them (e.g., riparian habitat buffers are ROW avoidance areas). Current management identifies no exclusion or avoidance areas.

4.4.1.3 Cumulative Effects

ACECs/RNAs:

Alternative A: Cumulative effects within or adjacent to ACECs/RNAs would continue from surface-disturbing activities. An increasing population could continue to build housing closer to ACECs/RNAs, thereby affecting the visual resources of the area. Livestock grazing would continue to make it easier for weeds to become established in ACECs/RNAs. As there are no mineral lease stipulations, mining activities may encroach on ACECs/RNAs. Other surface-disturbing activities, such as rights-of-way, would be reviewed on a case-by-case basis. It is assumed the ICBEMP and National Forest Plan Revisions take into consideration the protection of the special characteristics of ACECs/RNAs so that conflicting management actions do not occur. The cumulative effects to ACECs/RNAs would depend on the intensity and proximity of surface-disturbing activities.

Alternative B: Cumulative effects within or adjacent to ACECs/RNAs would occur from surface-disturbing activities. An increasing population could continue to build housing closer to ACECs/RNAs, thereby affecting the visual resources of the area. However, less livestock grazing in ACECs/RNAs would occur, making it more difficult for weeds to become established in ACECs/RNAs. Also, mineral lease stipulations (such as NSOs) would limit mining activities on ACECs/RNAs, and rights-of-way would not be authorized on ACECs/RNAs. It is assumed the ICBEMP and National Forest Plan Revisions take into consideration the protection of the special characteristics of ACECs/RNAs so that conflicting management actions do not occur. The cumulative effects to ACECs/RNAs would depend on the intensity and proximity of surface-disturbing activities, but the effects would be less than those under Alternative A.

Alternative C: The effects would be the same as those described under Alternative B; however, less livestock grazing would be allowed in ACECs/RNAs.

Alternative D: The effects would be the same as those described under Alternative B; however, more livestock grazing would be allowed in ACECs/RNAs.

Wilderness and Wilderness Study Areas: Historical and projected population increases influence wilderness areas and WSAs, which are typically used for primitive recreation. The planning area's projected 36 percent population growth and Idaho's projected 35 percent population growth over the next 20 years would likely lead to increased demand for primitive recreation areas in and around the planning area. Use of these areas would intensify as population increases. Additionally, there are another 1.7 million acres of other Wilderness areas within or immediately adjacent to the five-county planning area, including the Selway-Bitterroot Wilderness (1.3 million acres on National Forest lands), Gospel Hump Wilderness (205,000 acres on National Forest lands), Frank Church River of No Return Wilderness (2.4 million acres on National Forest), and Hells Canyon Wilderness (215,000 acres on National Forest and BLM [Vale District, Oregon] lands). As such, there are ample other Wilderness area opportunities to attract and accommodate this population growth. And, provided that there are actions that protect the Wilderness' and WSAs' characteristics from development and surface-disturbing activities, the increasing population's demands could be met.

National Trails: Cumulative effects on National Trails that have occurred and will continue to occur include archaeological investigations, illegal activities (e.g., cultural resource site vandalism or collecting), and development and maintenance activities (e.g., grazing, mining, recreation use, and OHV use). Archaeologists would continue to survey, identify, document, and preserve National Trail resources. However, the other

4. Environmental Consequences

activities would continue to threaten the discovery of, quality of, and integrity of National Trail resources on BLM-administered lands, as well as elsewhere.

Watchable Wildlife Viewing Sites: Cumulative effects on watchable wildlife viewing sites affect habitat for wildlife and disturbances to wildlife. Numerous cumulative actions and events, such as mineral development, timber harvesting, and motorized recreation, have the potential for diminishing habitat and disturbing wildlife. Assuming watchable wildlife viewing sites preserve sufficient habitat for wildlife and limit disturbances to wildlife, cumulative effects would be minimal.

4.5 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.5.1 Socioeconomics

4.5.1.1 Methods of Analysis

Objectives and actions from the alternatives would impact socioeconomics if they result in changes in local economies or socioeconomic indicators. Special attention was given to determine if impacts would disproportionately affect low income or minority groups. Indicators include:

- Changes in employment rates and revenues within the local economies;
- Effects on tribal access to tribal rights and tribal financial interests;
- Separation or displacement of low income or minority populations from community facilities; and
- Disruption of minority businesses.

4.5.1.2 Impacts

No low-income or minority populations would be displaced or separated from community facilities, nor would minority businesses be disrupted, so low-income and minority groups would not be disproportionately affected through these types of actions.

Impacts from Social and Economic Conditions Management

Under all alternatives, maintaining areas as safe for public use and providing opportunities for commercial use of natural resources will ensure that those areas are available for economically valuable activities. However, closures of unsafe or contaminated areas will remove those industries from those portions of the CdA FO.

Impacts from Fish and Wildlife, and Special Status Species Management

Under all alternatives, restrictions on vegetation treatments within RHCAs/RCA prevent harvesting of forest products from 9,099 acres (11 percent of BLM forested area). Alternatives would treat 1,200 to 9,600 acres over 15 years; therefore, these restrictions would not prevent meeting these treatment objectives and extracting forest products from outside the RHCAs/RCAs. However, these restrictions could affect the number of acres available for harvest during individual timber sales, decreasing the revenue generated by each sale. INFISH (Alternative A) and CNFISH (Alternatives B, C, and D), also place restrictions on roads and landings within RHCAs/RCAs which could increase the costs for harvesting forest products, further reducing revenue generated. Similarly, other wildlife and special status species management actions would constrain vegetation treatments and road construction in certain habitats, resulting in the same impact on revenue. Alternative C recommends the withdrawal of public lands within 300 feet of special status fish streambeds from mineral leasing. This would reduce the opportunity for the mineral industry to develop these areas, and limit revenues from the industry.

Conversely, under all alternatives, actions that enhance habitat for big game would provide more hunting opportunities, which would indirectly generate income for local economies from hunters. Alternative B calls for enhancement of sport fish habitat, which could have similar impacts from increased fishing.

Impacts from Wildland Fire Management

Under all alternatives, fuels treatments in WUI areas and suppression of wildland fire to protect people and property would reduce the potential for economic losses to local communities that could otherwise result from wildland fire. Alternatives A and B emphasize protection of economically valuable (revenue generating)

4. Environmental Consequences

commodity resources. Alternative C emphasizes protection of noncommodity resources (wildlife habitat, water quality, etc.) which could result in less protection of revenue generating resources. Alternative D balances emphasis between commodity and noncommodity resources.

Impacts from Forestry and Woodland Products Management

Forest products from BLM lands affect local economies by generating income for individuals, companies, and corporations. These effects would be directly related to the quantity of forest products. Table 4.5.1-1 below lists the 15-year PSQ for each alternative and uses the October 2005 average for prices paid to timber sale purchasers for material delivered to mills. Since a majority of the saw logs and hew wood would come from Douglas-fir and grand fir, the average of the delivered log price for these species serves as the basis for determining the average delivered log price in the table below. Some species like western white pine and western red cedar are worth considerably more, while other species like lodgepole pine, Engelmann spruce, and subalpine fir are worth less. The revenues provided to the Federal Government are based on a 21-year average from 1984 to 2004. The amount shown as income to the timber sale purchaser would be the gross amount paid. Out of the gross amount received, the purchaser would pay the stumpage value due to the BLM and would pay costs associated with logging, hauling, constructing, renovating, and maintaining roads, taking care of hazardous fuels abatement, and other costs that are associated with a timber sale, such as noxious weed management, site preparation in advance of reforestation, additional treatment of forest fuels, soil stabilization, and road reclamation. The average delivered log price paid to the purchaser would be affected by market conditions and could be more or less on a monthly basis.

However, given the increasing demand for wood products, it is expected that the average delivered log price would increase or remain fairly constant over the next 15 years (Table 4.5.1-1). The table below does not, however, show the value of these products relative to the local communities from operations of saw mills. As noted earlier, the amount of material provided by the BLM to local mills in the planning area would be low when compared with materials provided by the USFS and private sector.

Table 4.5.1-1 Fifteen-Year PSQ and Average Log Price, Stumpage Received, and Gross Incomes

Alternative	15-Year PSQ (MBF)	Average Delivered Log Price (\$/MBF)	Average Stumpage Received by Government (\$/MBF)	Total Gross Income for Purchasers (over 15 yrs)	Total Revenue for Government (over 15 yrs)
A	56,000	\$500	\$90	\$28,000,000	\$5,040,000
B	77,000	\$500	\$90	\$38,500,000	\$6,930,000
C	13,000	\$500	\$90	\$6,500,000	\$1,170,000
D	66,000	\$500	\$90	\$33,000,000	\$5,940,000

The local economies would be affected from vegetation treatments that may occur on timber sale contract areas but that were not covered under the timber sale contract. For examples, service contracts for such things as cone collection for tree seed, seedling production for reforestation, tree planting, stand density management, and treatments to reduce fuels that may or may not be part of a timber sale contract (e.g., slashing, piling, preparation for prescribed burning, prescribed burning, pile burning, mop up contracts, etc.) would provide employment for the local communities. The amount of such work that would be completed would vary according to the acres being treated for each alternative, with Alternative B having the greatest potential for such projects and Alternative C having the least potential.

Impacts from Livestock Grazing Management

Alternatives A and B allocate 4,004 acres providing 583 AUMs. At a lease rate set at \$1.43 per AUM, the BLM could collect \$834 in grazing fees. Presently, only 1,310 acres are leased for grazing. At a 12.5 percent rate of return, approximately \$100 could be returned to the local counties should all available grazing allotments be utilized. Alternatives C and D allocate only 1,218 acres, providing 426 AUMs. At a lease rate set at \$1.43 per AUM, BLM could collect \$609 in grazing fees. At a 12.5 percent rate of return, approximately \$80 could be returned to the local counties should all available allotments continue to be utilized. Thus grazing management has no notable impact on local economies.

Impacts from Minerals Management

Alternatives A and B involve more area (91,394 acres) open to the operation of mining laws than Alternatives C (67,024) and D (91,367). Thus there is more potential for areas to be mined, and more potential for generating revenue and employment for local economies under Alternatives A, B, and D than under Alternative C.

Impacts from Recreation Management

Growth and expansion in Idaho's tourism and recreation industry have been significant factors in Idaho's economy. Tourism is the state's third largest industry. According to the Dean Runyan Associates study conducted for the Idaho Department of Commerce in 1997, the average travel spending per visitor is \$1,425. Current recreation visits to BLM lands is estimated at 148,650. At the average expenditure per visitor this represents a \$211 million stimulus to the economy. Recreation use under all alternatives is projected to grow as area population grows. This growth is expected to be 36 percent over the 20 years.

Continuing current management would likely result in fee collections and visitor use similar to 2004 conditions, with a total of \$59,000 in fee revenues and 148,650 visitors. Increased demand would not be well accommodated and could be displaced. In general recreation management under Alternative B would best accommodate increased demand for developed recreation uses, and revenues from fees would increase. Alternative C would best accommodate increased demand for dispersed recreation, and fee collections would not increase. Recreation management under Alternative D would best accommodate increased recreation demand in general and could provide the most opportunities for increased fee revenues.

Impacts from Renewable Energy Management

Biomass energy development and utilization could generate revenue and employment for local economies. Biomass would be a byproduct of forest vegetation treatments, and potential for impacts would correspond with the number of acres proposed for treatment under each alternative. Alternative A would treat 7,000 acres. Alternative B would increase treatments by 37 percent. Alternative C would reduce treatments 83 percent reduction, while D would increase treatments 17 percent.

Development of wind energy could also generate revenue and employment for local economies. Development would be managed according to lands and realty management direction. See Impacts from lands and realty below.

Impacts from Transportation and Travel Management

Under current conditions, approximately 3.5 percent of visitor use of BLM-managed lands in Idaho is for OHV recreation. Applying this percentage to the number of recorded users in the CdA FO in 2004, this would represent roughly 7,430 OHV users. At an average expenditure per visitor of \$1,425, this would represent a \$10,587,750 stimulus to the local economy. OHV and snowmobile users who favor open travel would be most likely to continue use of public lands in the CdA FO for recreation under Alternative A.

4. Environmental Consequences

However, there are no areas open to wheeled motorized vehicle use under the action alternatives (Alternatives B, C, and D). And under Alternative C, off-road snowmobile use would not be allowed. This could prompt those who favor open OHV travel recreation to go elsewhere, reducing potential expenditures of this user group within the local economy. The amount of area closed does not vary greatly enough among alternative to have an effect on motorized OHV use. Therefore, the factors that do influence motorized travel are the miles of designated roads, miles of designated roads with seasonal or vehicle class restrictions, and amount of area open to off-road snowmobile use. In general, more designated road, fewer restrictions, and more open snowmobile area would attract more visitors, generating more income to the local economies. These factors are displayed in Table 4.5.1-2 below.

Table 4.5.1-2 Transportation and Travel Management by Alternative				
Travel Designation	Alternative A	Alternative B	Alternative C	Alternative D
Open Travel Areas (acres)	63,041	0	0	0
Closed Travel Areas (acres)	162	162	311	631
Limited Travel Areas (acres)	33,567	96,608	96,459	96,139
Designated Roads/Trails (miles)	27	282	122	175
Roads/Trails with Seasonal or Vehicle Restrictions (miles)	14	113	69	68
Open to Off-road Snowmobile (acres)	66,949	64,157	0	63,373

Impacts from Lands and Realty Management

Land tenure adjustments could result in gain or loss of valuable resources in federal ownership, which could contribute to local economies. Alternative A has a geographic boundary defining areas for retention and acquisition, which incorporates most BLM lands that contain or have potential for valuable commodity resources (e.g., timber, minerals, and recreation). Alternative B identifies commodity resources and developed recreation as criteria for retention and acquisition. Alternative C emphasizes retention and acquisition of noncommodity resources lands, and opportunities for primitive recreation. Alternative D includes both commodity and noncommodity resource values as criteria.

ROW exclusion and avoidance areas could affect costs associated with placement of roads and facilities, thus reducing revenue for local economies from commodity production or extraction. Current management does not specify any specific restrictions on ROW authorizations or land use permits. However, Alternative B identifies 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. Alternative C identifies 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. Alternative D identifies 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas.

4.5.1.3 Cumulative Effects

Alternative A: Under Alternative A, management of the CdA FO would remain the same, but the above listed actions would continue to occur. Although general socioeconomics would remain the same under current CdA FO management, it could be affected by many of the above listed actions. In addition to the cumulative effects discussed below, cumulative effects on Native American access to tribal rights and financial interests are considered effects on socioeconomics as well.

Employment rates, revenues within local economies, and dollar returns to counties could be affected by a variety of actions described above. Land tenure actions have and may continue to reduce public lands

managed by the CdA FO, reducing county revenues that could come from those areas as well as employment opportunities, while surrounding counties in the CFO experience increases in revenues and employment opportunities through the increase in public lands. Should the CdA FO alter its decreasing land tenure trend and begin increasing its public lands, revenues and employment opportunities for that FO's counties could increase. Revenues and dollar returns could also be impacted as insect and forest disease activities limit opportunities for the timber industry and decreasing fish and wildlife populations force increased Endangered Species Act listings, reducing the availability of those species for recreation and industries.

Several of the above actions could provide for improved employment rates, revenues, and dollar returns to CdA FO counties. The increasing trend of recreation demands could similarly increase county incomes and employment opportunities for local communities. Along these lines, implementation of the National Fire Plan and wildland fire suppression techniques could prevent the loss of housing and revenue opportunities within the region. It would also be expected that the various local management plan revisions would provide better economic opportunities for the regional economies and employment rates.

Population growth within the northern Idaho region is expected to grow even without implementation of the CdA RMP. Within the CdA FO population would grow slower than in the past, but at a rate faster than the state's. This could increase demand for housing and the necessity for public facilities and services.

Alternative B: Under Alternative B, cumulative effects on general socioeconomics would be similar to Alternative A, but with increased opportunities to increase county dollar returns and revenues as well as employment opportunities. The increase in employment opportunities may contribute further to the growing population and demand on the housing market and public services and facilities as people move to the area for jobs. Similarly, the increase in recreation opportunities proposed under Alternative B could bring additional revenues and employment opportunities to the CdA FO counties as well as increase demand on public services and facilities. These changes would be caused by the focus of Alternative B on developing economically viable resources.

Alternative C: Under Alternative C, cumulative effects on general socioeconomics would be similar to Alternative A, with even less opportunities to increase employment rates and county dollar returns and revenues.

Alternative D: Alternative D would balance the cumulative effects on general socioeconomics under Alternatives B and C. County revenues and dollar returns could increase as more industry and recreation activities are allowed in some areas, and decrease as other areas are closed to such activities. Population growth and the housing market could remain the same as under Alternative A, but the demand on public facilities and services could increase as additional recreation and industry opportunities are allowed, compared to Alternative A.

4.5.2 Public Health and Safety – Abandoned Mines and Hazardous Materials

4.5.2.1 Methods of Analysis

Management actions could result in impacts on public health and safety management if actions directly or indirectly change the condition of, or access to abandoned mine lands and hazardous materials sites or the ability to cleanup and protect hazardous sites. Impacts would also occur from actions that result in changes to public safety from other hazards.

Analysis of the alternatives was based on the assumption that increased use of public lands is anticipated to result in the following:

- An increase in illicit dumping and releases of petroleum products and hazardous substances with a corresponding increase in the number of hazard sites;
- An increase in the number of people that come into contact with physical and chemical hazard sites;
- An increase in the disturbance and mobilization of metals from contaminated floodplains, streams and lake bottom sediments; and
- An increase in the potential for disturbance to remediate mine lands and other remediated hazard sites.

4.5.2.2 Impacts

Impacts from Socioeconomic Resources and Environmental Justice

Health and Safety – Abandoned Mines and Hazardous Materials Management

The public health and safety programs of abandoned mine lands (AML) and hazardous materials management (HMM) would reduce threats to public health, safety, environment and property from exposure to hazards associated with abandoned mine lands, hazardous materials, and other hazards on public lands regardless of the alternative adopted. However, the levels of potential risks are anticipated to vary by alternative pursued.

Alternative A: This alternative would continue the current management of Abandoned Mine Lands (AML) and Hazardous Materials Management (HMM) programs in the planning area with little change. These programs identify (inventory) sites with potential problems and address any issues with appropriate measures. Both programs benefit public safety through the prevention of illegal hazardous materials actions on public lands; ensuring proper use, authorization, permitting, and regulation of hazardous materials on public lands; conducting timely, efficient, and safe responses to hazardous materials incidences on public lands; and correcting physical hazards and cleanup of hazardous sites on public lands. However, Alternative A would not improve public health and safety as much as Alternatives B, C, and D because these alternatives would require special stipulations and closures.

Alternative B: This alternative generally incorporate the elements from Alternatives A and adds program management actions. This alternative would improve the inventories of AML and hazardous material sites with improved tracking using site files and databases. Recreation facilities and use areas would be regularly assessed for safety hazards and corrective actions would be taken to correct these hazards, when necessary.

The development of written monitoring plans for closed/remediated sites and the periodic review of the performance of remedies implemented would assist in providing consistency of site performance over time. The review of remedies used at sites where hazardous substances remain no less often than every five years

would impact public health and safety by ensuring that remedies at these sites remain protective and effective. Use authorizations for these sites would be reviewed for any needed special stipulations to assure public and resource safety. The sites would also be restricted with no surface occupancy or disturbance of the hazardous materials or with stipulations to ensure proper handling and bonding.

Recreation plans would include direction to aid in the protection and/or restriction of recreation access to contaminated floodplain, lakeshore, and submerged areas along Coeur d'Alene Lake and River. Protection and/or restriction of recreation access to this and the mining areas of the Silver Valley (including Pine Creek areas) could help to preserve, if not lead to, an improvement in public safety, water quality and protect aquatic, avian, and mammalian species near these areas. This alternative would appear to be the most protective of the alternatives with regard to human health and safety with recreation management.

Use authorizations for the use of or potential for, hazardous materials on public lands would be reviewed for any needed special stipulations and periodically reviewed for compliance to assure public and resource safety.

Not authorizing the use of or potential for, hazardous materials on public lands is likely the best means of safe guarding human health, preventing environmental damage, and limiting BLM liability from hazards, regardless of whether the uses comply with state and federal regulations.

For sites with potentially hazardous materials, proposed mining activities would be restricted with no disturbance of the hazardous materials or with stipulations to ensure proper handling and bonding under the mining law. The significant known hazardous materials sites would also be restricted with no surface occupancy for mineral leases. Limiting new mining activities on public lands would insure existing hazard sites are protected or handled better to protect the public and environment. Limiting new mining activity would allow the AML and HMM programs to focus on existing metals, contaminated soils, and stream features, resulting in improved environmental health and benefit to public health and safety.

Alternative B generally incorporates the elements from Alternative A and adds more protective actions for public health and safety and environmental health in terms of both short-term and long-term impacts. Alternative B would, however, be somewhat less protective of public health and safety than Alternative C and D.

Alternative C: This alternative contains the elements of Alternative A and elements of Alternative B with the addition that sites with significant known hazardous materials and restored sites have been proposed as ACECs and the sites also would be withdrawn from the mining laws. The use of ACEC designations and withdrawals (closing under the mining law) to protect significant or at-risk closed and remediated sites would be beneficial to public health and safety and environmental health because significant hazardous materials remain and continue to be a threat. Renewal of mining activity at previously mined and contaminated sites could result in incidental or intentional damages to such sites. Restrictions on public access and the management protection of ACEC sites would be the most protective alternative for these specific sites with regards to public health and safety and environmental health.

Alternative C would appear to be more protective of environmental health and public health and safety than Alternative B and much more than Alternative A.

Alternative D: This alternative contains the elements of Alternative A and elements of Alternative B with the addition that sites that are closed and remediated with hazardous substances remaining and with significant known hazardous materials are also closed to motorized vehicles. The alternative also extends the mineral

4. Environmental Consequences

leasing no surface occupancy stipulation to all hazardous materials sites. Use of closed to motorized designation and its limitations, including the need to submit a plan of operation for any mining activity to protect significant hazardous sites would be beneficial to public health and safety and environmental health. Restrictions on access, mineral leasing and mining plans along with periodic review of actions and remedies employed appear to be the most protective of the alternatives with regards to public health and safety and environmental health.

Alternative D would generally incorporate the elements from Alternatives A and B that are the most protective of public health and safety and environmental health in terms of both short-term and long-term impacts. Alternative D would, however, be slightly less protective than Alternative C for the use of proposed ACEC sites and closing under the mining law of significant sites, but more protective by closing motorized vehicle use at significant sites and adding no surface occupancy for other known hazardous materials areas.

Impacts from Soil Resources Management

Under all alternatives, implementation of BMPs for actions and events (Appendix A) would help reduce the potential effects of hazardous materials from hazard sources. Erosion protection, site stabilization, and better vegetative cover would reduce exposure and movement of contaminated soils, reduce runoff and flood potential. Mitigation and remediation of ground disturbing activities for roads and other activities could also improve soil conditions that could affect AML and HMM programs. The differences between alternatives would not be measurable in terms of impacts on public health and safety.

Impacts from Water Resources Management

Under all alternatives, compliance with State and federal requirements to protect public waters would affect AML and HMM programs by prescribing BMPs that would reasonably prevent degradation of water quality on sites. Watershed and stream improvements would reduce the potential for erosion and migration of contaminants. Clean Water Act 303(d) streams could affect public health and safety as contaminated sites occurring on or in the segments would require mitigation measures to reduce point sources.

Alternative A would neither implement specific actions to reduce nonpoint source pollution or maintain nor improve water resource attributes (i.e., water quality) that would affect changes for the improvement of public health and safety. Alternative A would not implement any specific cooperative relationships with landowners, agencies, communities, and municipalities that could improve beneficial uses of water and indirectly affect public health and safety.

Impacts from Alternatives B (and C and D) would implement specific actions to reduce nonpoint source pollution and maintain and improve water resource attributes (i.e., water quality) that would affect changes for the improvement of public health and safety. Also PFC and nonpoint efforts for water improvement would be the same for the alternatives. Cooperation with adjacent landowners, agencies, tribes, communities, and municipalities would also be beneficial in remediating and restoring AML and hazardous material sites.

Impacts from Alternatives C and D water resources management on public health and safety would be the same as Alternative B.

Impacts from Vegetation – Forests and Woodlands Management

Conducting fuels reduction treatments and returning stands to historic conditions within the WUI would reduce the risk of wildland fire to communities and private property and would have an indirect effect on public health and safety from the standpoint of protecting the public from wildland fire injury. However, conducting treatments on or proximal to AML and hazardous sites could produce undesirable ground

disturbance and the construction of roads creating more access to hazard sites. The intensity of this impact would depend on the number of acres harvested. Alternative A would treat forest vegetation on 7,000 acres for these purposes. Alternative B would increase treatments by 37 percent. Alternative C would result in an 83 percent reduction, while D would increase treatments 17 percent. While the number of acres varies by alternative, the impacts on public health and safety would largely depend the location of timber sales and actions within the sales.

Impacts from Vegetation – Riparian and Wetlands Management

Objectives are generally consistent across alternatives within the planning area, thus impacts would be consistent on public health and safety. Improved riparian and wetland conditions would help protect AMLs and other hazardous materials sites and thus have a positive impact on public health and safety. Wetlands and good riparian conditions aid in removing and storing contaminants. Many AML/HM sites have limited vegetation, so improving riparian and wetland conditions may have a positive impact on public health and safety. Improving watershed conditions could help protect sites, like contaminated floodplains.

Alternative A does not address monitoring of nonfunctional and functional at-risk areas to detect upward or downward trends. Alternative B has the least potential to protect public health and safety compared to the other alternatives by striving to achieve PFC for a smaller percentage of riparian and wetland areas across the CdA FO (50 percent versus 75 percent for Alternatives A, C and D).

Impacts from Vegetation – Nonforested Management

Many AML/HM sites have limited vegetation, so improving nonforested conditions may have a positive impact on public health and safety. Improving watershed conditions helps to protect sites, like contaminated floodplains. Alternative A would promote plant community vigor and soil stability to improve watershed conditions. Alternative A has the least potential of the alternatives to protect AMLs, hazardous materials sites, and public safety. Alternative B, C, and D would restore herbaceous plant communities within their site potential and not rely on the *Idaho Standards for Rangeland Health*. Alternatives C and D specify actively preventing off-road motorized and mechanical vehicle access/use and would thereby be more protective of public health and safety by preserving foliated cover and preventing ground disturbance.

Impacts from Fish and Wildlife and Special Status Species Management

Restoration of aquatic, riparian, and wetland habitats for fish and wildlife through INFISH/CNFISH, including for special status species, would include maintaining/restoring watersheds and the protection of and enhancement of riparian and aquatic ecosystems. Such actions would have indirect effects on efforts to improve public health and safety by protecting and improving water resources.

Protection measures for special status species (i.e., bald eagle, gray wolf, white sturgeon) could conflict with cleanup and remediation activities if equipment, methods or other human disturbances would directly or indirectly impact such species and their habitats during sensitive periods of the year (i.e., nesting, denning, spawning). Impacts on public health and safety would be short-term with remediation and cleanup actions continuing at the conclusion of these sensitive periods. Continued cooperative participation in recovery and management plans and conservation strategies would reduce potential conflicts.

Seasonal and proposed road closures along with the obliteration of roads following project completion to protect big game habitat would restrict potential access to AML and other hazard sites, thus improving public safety.

4. Environmental Consequences

A number of bat species are considered sensitive, and their presence in abandoned mines and adits require evaluations of the open mines and possible bat gating. There are both benefits to special status wildlife and public health and safety when such openings are closed to protect roosts and hibernacula, and restricting public access.

Impact from special status plants would usually not impact public health and safety. Similar to aquatic and terrestrial species, continued cooperative participation in special status plant recovery and management plans and conservation strategies would reduce potential conflicts.

Impacts from Wildland Fire Management

Wildland fire management would reduce impacts on public health and safety by reducing fire potentials and the likelihood that the public and BLM employees would be injured by wildland fire. Fire management plans and procedures to protect valuable resources would also affect AML/HM sites where greater protection would be necessary in the more populated areas, such as the WUI.

Impacts from Cultural Resources Management

Impacts from cultural resources would have some impacts on public health and safety where the preservation of old mine features and structures may also present a threat to public safety. Part of the public health and safety effort is to protect cultural values, when possible, while undertaking cleanups. However, public health and safety must try to minimize hazards and risks at sites on public lands. AML inventory and collection of historical information both help identify AML and physical hazards that could require mitigation, but could also conflict with goals to protect cultural resources.

Impacts from Minerals Management

The minerals program is likely to impact public health and safety and the efforts of the AML and HMM programs. Based on the previous mineral extraction activities that have occurred within the CdA FO, it should seem readily apparent that these activities generally have undesirable outcomes on water quality, soil quality and conversely impact public health and safety. Offering less acreage for these activities would compliment the goals of the AML/HMM program. Alternatives A and B involve more area (91,394 acres) open to the operation of mining laws than Alternatives C (67,024) and D (91,367). Thus there is more potential for areas to be mined, and more potential for impacts.

Impacts from Recreation Management

Increased recreational demand and utilization of public lands would increase the likelihood that the public would come into contact with AML or other hazardous sites that have not yet been inventoried and/or remediated. The Recreation program intends to provide better road access to public lands and motorized boat access. Enhanced opportunities for water based leisure activities would increase use and disturbance of floodplain, lakeshore, and lake bottom sediments by boat traffic, where contaminated sediments from toxic metals are present. This could have negative impacts on public health and safety and environmental health. Disturbance of floodplain, lakeshore, and lake bottom sediments may mobilize precipitated toxic metal constituents and lead to a decrease in water quality. The decrease in water quality is likely to effect public safety and have injurious effects on aquatic species and in turn have injurious effects on the wildlife that consume water and the tainted aquatic species from these areas.

Increased utilization of public lands would likely intensify the need to regularly assess recreation facilities and use areas for safety hazards. Increased utilization of public lands would increase the likelihood that the public will come into contact with AML or other hazard sites. Increased use and contact around AML and hazard sites would likely have a negative impact on public health and safety.

The objectives and goals of the recreation program could have impacts on public health and safety and environmental health across alternatives with regards to AMLs and other hazard sites. However, there is a contradictory argument that recreation plans and SRMAs have positive impacts on public health and safety and that recreation planning and restrictions within these plans should help protect the public from AML and hazardous material sites. Recreation programs assist in collecting solid waste, which mitigates illicit solid waste dumping. Recreation program maintenance, signage, and information efforts could help reduce exposure to physical hazards and other types of hazard sites.

The mixture of acreages for different SMRAs across alternatives makes the most protective alternative of public health and safety difficult to discern. Alternatives A and B have SMRAs for Coeur d'Alene Lake and the Lower Coeur d'Alene River areas. Alternatives C and D have a SMRA for the Killarney Lake area, which would be BLM's main management area in the Lower Coeur d'Alene River area. Alternatives B and D include an SMRA for the Silver Valley, and Alternatives B, C, and D include the Rochat Divide/Pine Creek SMRA. Overall, Alternative B would best cover the identified area for public safety planning needs compared to the other alternatives. Alternative A has the Lake and Lower CDA River areas but not the upper mining site areas. Alternative C does not include the upper Silver Valley area and only the Killarney part of the Lower CDA River. Alternative D is nearly the same as Alternatives B with only the Killarney part of the Lower CDA River.

Impacts from Renewable Energy Management

Impacts from renewable energy program could impact AMLs, HM sites, and public health and safety through improving access and ground disturbing activities from the location of wind energy sites and acquisition of biomass. Protection of public health and safety would continue, however, as right-of-way grants would not be issued in areas that would jeopardize remediation activities.

Impacts from Transportation and Travel Management

The transportation and travel management program could impact public health and safety through inadvertently providing access to hazard sites and producing ground disturbing activity. Alternatives B, C and D would implement OHV restrictions to protect public health and safety. OHV use would be restricted such that AML and HM sites areas should not be driven over or accessed except by existing roads. Protection and/or restriction of the general public to public lands where hazardous materials remain could prevent the disturbance and/or vandalism of remediation actions and events. Protective membranes and/or earthen caps may be damaged by OHV or other vehicular traffic. Remediation equipment and instrumentation, such as pipes, bioreactors, and flow meters may also be damaged by firearms. Preventing off-road motorized and mechanical vehicle access/use would protect the public health and safety by also preserving herbaceous cover and preventing ground disturbance.

Restriction of access to remediated AMLs and other HM sites would allow the AML and HMM programs to focus on addressing new hazard sites rather than repairing damage at sites where remediation measures have already been employed. Not authorizing the use of, or potential for, hazardous materials on public lands would likely be the best means of safeguarding human health, preventing environmental damage, and limiting BLM liability from hazards, regardless of whether the uses comply with state and federal regulations.

Alternatives C and D would close to motorized vehicles significant HM sites (in C those proposed as ACECs) to protect the sites and the public health and safety values. Alternative D would also close the areas where there are closed/remediated sites with potentially hazardous substances remaining to protect their site values.

4. Environmental Consequences

Impacts from Lands and Realty Management

Lands and realty could impact public health and safety through inadvertently providing access to hazard sites, producing ground disturbing activity on or proximal to hazard sites, or encouraging development near hazard sites. Public lands with hazardous materials would only be limitedly exchanged or otherwise adjusted to protect long-term public health because of existing policies and regulations.

Alternative A would be the least protective of public health and safety by not specifying any acreages under the ROW exclusion and ROW avoidance designations.

Alternative B appears to be more protective of public health and safety than A by offering acreages similar to Alternatives C and D under the ROW exclusion designation, but would be less protective than Alternative C which offers approximately twice the acreage under the ROW avoidance designation. Alternative B recognizes that land exchange or disposal would require that such actions occur only with Potentially Responsible Parties. With Alternative D, about 149 acres scattered in and near known sites with significant known hazardous materials would be closed to motorized vehicles when appropriate.

Alternative D appears to be more protective of public health and safety than A by offering acreages similar to Alternatives B and C under the ROW Exclusion designation, but is less protective than Alternative C which offers approximately twice the acreage under the ROW Avoidance designation.

Impacts from Special Designations

There are no special designations that would directly affect public health and safety sites under Alternative A and B. Under Alternative C designation of the Constitution Mine and Mill Site, Liberal King Mine Site, Hecla-Star Tailings Pile, Motherlode Mine, Nabob Millsite, Rex Millsite Tailings Pile, Sidney Mine and Millsite, Wallace Landfill, We-Like Mine, and Killarney Lake as ACECs would protect the public from natural hazards. The Pulaski Tunnel would protect the public from natural hazards as a public interpretation site. Designations would make these ACECS an NSO-1 and ROW avoidance areas that would ensure that no surface disturbing activities occur. Under Alternative D, only the Pulaski Tunnel site would be protected. Compared to Alternatives A, B and D, Alternative C would provide the most long-term protection for public health and safety.

Tribal Interests

The BLM, as a governmental agency, maintains a special government-to-government relationship with federally recognized Indian tribes. Members of the Coeur d'Alene Tribe, the Kalispel Tribe, the Confederated Salish and Kootenai Tribe, and the Kootenai Tribe exercise their hunting, fishing, and gathering rights on federal lands outside the boundaries of their reservations, including public lands within the planning area. These pursuits include fishing for resident game fish species, hunting large and small game, and gathering natural resources for cultural purposes. It is expected that the demand from Native Americans to exercise their treaty rights on public lands will continue and potentially increase. Given these conditions, the Tribes could affect public health and safety across alternatives if access increases possible exposure to hazard sites while in the pursuit of collection of food, fiber and other culturally and religiously significant resources. Culturally significant sites could also directly or indirectly conflict with identified hazardous sites and management actions. The ability to carry out mitigation measures and secure hazardous materials sites for public health safety would likely be resolved as BLM has a long-standing relationship with the Tribes or cooperative efforts like that with the Coeur d'Alene Tribe on the Coeur d'Alene Basin Superfund and NRDA efforts. The impact on public health from Native American tribal uses would, then, be short-term overall.

4.5.2.3 Cumulative Effects

Cumulative impacts on public safety generally stem primarily from activities in the planning area that improve access and cause disturbance of the ground surface in areas containing hazardous materials. Cumulative impacts on public safety are mitigated by management actions that specify surface use restrictions, such as: closures, withdrawals, no surface occupancy (NSO), and from seasonal restrictions. Protective buffers, special designations, and avoidance areas also help to mitigate cumulative impacts on public safety. The activities that lead to cumulative impacts on public safety in the CdA FO and CFO would appear to be interrelated and synergistic: increased access leads to greater likelihood of exposure to chemical and physical hazards that may be present and to increased ground disturbance, which in turn destabilizes AML and hazardous materials sites further diminishing public safety.

Actions and plans with cumulative impacts not protective of public safety

The continuance of land tenure actions that consolidate BLM-administered lands would lead to the exchange of lands proximal to AML, hazardous material sites, and other hazard sites. The exchange of lands proximal to hazard sites is anticipated to increase as consolidation of holdings progresses.

Domestic livestock (cattle, sheep, and horses) have grazed and will continue to graze most of the area, including BLM-administered lands, Nez Perce and Coeur d'Alene Reservation lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands. Livestock grazing increases access, causes ground disturbance, and reduces foliage and thereby impinges on hazardous sites.

Timber has been harvested on and is harvested on: private lands, State of Idaho lands, BLM-administered lands, and National Forest lands. Despite the decline in timber sales from National Forests in Idaho and the possible further decline in timber sales in the foreseeable future, logging will continue on public lands, albeit at a reduced rate, and on private lands at a projected increasing rate in both the CdA FO and Cottonwood planning areas. The continuance of logging activities would likely result in future access and ground disturbance on or around AMLs, hazardous materials sites, and other hazards sites.

Future increased hard rock mining activity in the Silver Valley of the planning area would impact public safety primarily through a further decrease in water quality from mine site runoff. Hard rock mining has greatly decreased in the Silver Valley as a function of commodity prices; only two silver-based metal mines continue to operate at a low level. A renewal of large scale mining for silver in the Silver Valley would appear to be unlikely in the foreseeable future. However, the abundance of AMLs and mining affected lands in BLM holdings, the holdings of other federal agencies, the holdings of state agencies, and private holdings will continue to contribute toxic metals to the Coeur d'Alene Basin watershed into the foreseeable future and impact public safety.

Development of various industrial minerals in the planning area, including sand, gravel, and dimension stone is expected to continue to expand or contract in response to urban growth and construction in Idaho. Development of industrial minerals and/or saleables can impact public safety through increasing access, ground disturbing activity, fugitive dust, and creation of physical hazards. Runoff from industrial mineral sites may cause sedimentation of nearby stream features and affect the reproduction of aquatic species. Petroleum products would be required to run mineral extraction equipment and hazardous substances may be utilized to service said equipment. The increased presence of heavy trucks on secondary roads in the CdA FO required to transport saleable minerals may also be a public safety issue.

4. Environmental Consequences

Past exploration activity in the CdA FO and CFO for oil and gas, geothermal, and solid leasables (both energy and nonenergy) has been low. The potential for these resources is also deemed to be low. Future prospecting for these resources may impact public safety by improving access and creating ground disturbance.

Road construction associated with timber harvesting and mining on BLM-administered lands, private lands, State of Idaho lands, and Clearwater, Payette, Nez Perce, and Idaho Panhandle National Forest lands has recently slowed due to less harvesting and mining activity on National Forest and BLM lands when compared with the recent past. However, this activity is expected to continue at a steady rate on BLM-administered and National Forest lands and at an unknown rate on private and State of Idaho lands. Road construction has a generally negative impact on public safety by causing ground disturbance and increasing access and the likelihood that the public will come into contact with hazards. Increased access may also lead to an increase in illicit dumping of materials, both of the hazardous and relatively innocuous solid waste varieties.

The continuing increase in Idaho's population impacts public safety by increasing the number of people that would visit BLM-administered lands and encounter the chemical and physical hazards that are present; increasing the number of people that can cause ground disturbance, either by foot travel or vehicular traffic; and increasing the number of people that may engage in illicit disposal activities. The impacts on public safety from population growth are greater for the CdA than for the Cottonwood planning area; the CdA FO has seen more than three times the rate of population growth between 1990 and 2000, 41 percent versus 13 percent. This trend is anticipated to continue into the foreseeable future. In the Cottonwood planning area, population is projected to grow 11 percent from 2000 to 2020, while the population of the CdA planning area is projected to grow 36 percent, closer to the overall percentage for the State of Idaho of 35 percent.

Increased recreation use increases the likelihood that AMLs, hazardous material sites, and other hazard sites will be encountered by motorized off-road vehicle users, mountain bikers, hikers, hunters, and other outdoor recreational enthusiasts in both the CdA and Cottonwood planning areas. Recreation has increased, and use patterns and motorized technology have changed. Recreation-related visits to Idaho are estimated to continue to increase at an annual rate of one to four percent (Tetra Tech Inc. 2005a, 2005d). Recreational activities will continue to contribute to soil impacts by foot traffic and off-road vehicle use. An increase in the use of developed recreation sites and campgrounds is likely as the population increases, which will also likely lead to an increase in illicit dumping activity and potentially to an increase in releases of petroleum products and hazardous materials.

Actions and plans with potentially mixed impacts on public safety

Hazardous fuels reduction, wildland-urban interface actions and events, and activities that develop defensible space under the Idaho Statewide Implementation Strategy for the National Fire Plan would be protective of public safety by protecting the public from wildland fire. However, such activities can cause ground disturbance and erosion around AMLs and other hazard sites and lead to site instability. Fuels treatments, including prescribed fire and mechanical treatment methods and wildland fire use, is expected to increase. Hazard to the public from prescribed fire will be mitigated by following all guidelines and regulations, including public notices and meetings.

The development and implementation of the Forest Service/BLM Interior Columbia Basin Ecosystem Management Project/Strategy (ICBEMP) would be protective of public safety by maintaining and promoting healthy, productive, and diverse ecosystems and by restoring areas that are degraded. Development of a coordinated multiscale and interagency approach to planning and decision making should also be protective of public safety by expediting the improvement of watersheds and ensuring that AML and other hazard site

are avoided. Repatterning succession and disturbance regimes to reduce events such as uncharacteristically large and severe wildland fires would also be protective of public safety.

However, restoration of natural hydrologic process and disturbance patterns in watersheds, such as presumably unmanaged seasonal flooding, under the ICBEMP could potentially have a short-term impact public safety and environmental health by allowing stream and floodplain sediments that contain toxic metals to be mobilized. This is more of a concern in the CdA FO with regards to the Silver Valley and Lower Coeur d'Alene River.

The development of integrated weed management strategies under the ICBEMP may impact public safety. Noxious weed treatment efforts may impact public safety by disturbing AML and hazardous material sites, which frequently have infestations of invasive species. Use of chemical treatments, such as herbicides, to control invasive species also raises human and environmental health issues.

The Coeur d'Alene RMP would protect public health and safety by outlining assessment, mitigation, and corrective protocols for AML, hazardous material, and other hazard sites, which were absent in the original Emerald Empire MFP (BLM 1981). The specification of these protocols would generally protect public safety across the alternatives considered by providing specific future management for these items. However, the management protocols for some of the other resource areas, such as Recreation, Transportation and Travel Management, would appear to be less protective of public safety across alternatives.

The completion of Forest Plan Revisions for various National Forests would protect public safety by establishing management direction for new initiatives such as the National Fire Plan and Healthy Forest Initiative and to concerns about listed species, habitat restoration, and commodity production. The revised Forest Plans differs from the original plans in that they emphasize restoring or maintaining vegetation and watershed conditions and focus on the ecological condition of the forests rather than commodity production. However, management direction for recreation, forest products, and livestock grazing may conflict with the protection of public safety by improving access and creating ground disturbance.

Actions and plans that are protective of public safety that may mitigate cumulative impacts on public safety

The anticipated increased federal and state agency conservation efforts to preserve some declining populations of fish and wildlife species in the Pacific Northwest would likely assist in mitigating some cumulative impacts on public safety through improvement of watersheds, aquatic habitats, and restriction of access to sensitive areas. Listings under the Endangered Species Act would also assist in mitigating impacts on public safety by preserving habitat and limiting access.

Air quality in the planning areas is seasonally affected by agricultural field burning and wildland fires. Particulate matter standards may impact the methods by which AML and hazardous materials sites are cleaned up in terms of the creation of fugitive dust and prescribed removal of structurally hazardous wooden mine structures by means of fire.

Water quality has a direct impact on public safety. Human activities, such as timber harvesting, livestock grazing, agriculture, OHV use, and mining (especially in the Silver Valley within the planning area) have contributed to water quality limited streams and will continue to contribute to poor water quality in some streams. The establishment of Total Maximum Daily Loads (TMDL) by the State of Idaho Department of Environmental Quality for some 303(d) water quality limited streams in the CdA and Cottonwood planning areas would be protective of public safety and environmental health.

4. Environmental Consequences

The restriction of access to BLM lands by some private landowners would be generally protective of public safety by not allowing the public to come into contact with chemical and physical hazards that may be present. The restriction of access by private landowners to BLM lands is likely to increase, while the demand for access to public lands has increased and will continue to increase with growth in population and recreational use.

4.5.3 Native American Trust and Interests

4.5.3.1 Methods of Analysis

Objectives and actions could impact Native American interests if they result in changes to tribal treaty rights/trust resources, ethnographic resources, access to TCPs, preservation of archaeological sites, the handling of Native American Graves Protection and Repatriation Act (NAGPRA) materials, or the maintenance of suitable habitat for species of importance to tribes.

Because tribal treaty rights and trust responsibilities are primarily related to natural and cultural resource programs, it is appropriate to consider indicators of change used by those programs to determine potential change to treaty rights and trust responsibilities. In addition, consultation is also necessary because indicators for tribal issues associated with these resources may be different from those used in other measures of impact. Some specific indicators include changes in the following:

- Availability, access, or land use that would affect the natural resource base used by the tribes, including fish, game, plants, minerals, and springs;
- Access to or impacts on cultural resource sites, including ethnographic resources and traditional cultural properties;
- General ecosystem health, water quality, and riparian function; and
- Land tenure or land use that could impair future exercise of treaty rights.

4.5.3.2 Impacts

Impacts from Social and Economic Management

Native American Tribal Uses

Under all alternatives, improving the natural and cultural resource conditions of the CdA RMP planning area could enhance tribal use of the area by preserving and sustaining culturally significant plants, animals, and locations, including TCPs. Consulting with appropriate tribes would ensure that culturally significant species and locations receive the necessary federal protection.

Impacts from Vegetation—Invasive Species and Noxious Weeds Management

By focusing on limiting ground-disturbing activities, the weeds management program under all the alternatives could result in a long-term effect on tribal uses by minimizing the possibilities for impacts on cultural and ethnographic resources and TCPs.

Impacts from Soils Management

Under all alternatives soils management would aim to limit soil erosion and surface disturbances. This would result in a long-term effect through the enhancement and preservation of cultural resource sites, ethnographic resources, and TCPs. In addition, measures under the action alternatives (Alternatives B, C, and D) to work cooperatively with tribes would help ensure preservation of traditional uses.

Impacts from Water Resources Management

Under all alternatives, effects from Water Resources Management could include direct risks to cultural resource sites and access to ethnographic resources and TCPs. Actions to restore watersheds could include risks of directly disturbing cultural resources through ground-disturbing activities, a permanent impact. Such actions could also result in temporary loss of access to ethnographic resources or TCPs, a short-term impact.

4. Environmental Consequences

Watershed improvements that reduce erosion could enhance site preservation, while improvements in water quality could enhance traditional cultural uses.

Impacts from Vegetation—Forest and Woodland Management

Under all alternatives, restoring historic forest species composition could, in the long-term, improve culturally significant plant and animal habitat and reduce erosion of cultural resources and TCPs in the restored areas. However there could also be long-term impacts due to changes in setting and short-term impacts due to temporary loss of access to TCPs or other culturally significant areas during treatment or closures. Long-term impacts on tribal use of Cda FO public lands could result from ground disturbance associated with treatment programs. Potential for impacts would correspond with treated acres. Alternative A would treat forest vegetation on 7,000 acres for these purposes. Alternative B would increase treatments by 37 percent. Alternative C would reduce treatments 83 percent reduction, while D would increase treatments 17 percent.

Impacts from Vegetation—Riparian and Wetlands Management

Under all alternatives, achieving proper functioning condition for riparian and wetland vegetation could enhance riparian function and general ecosystem health. This could improve tribal use of TCPs and ethnographic resources. Alternatives A, C, and D set an objective of 75 percent PFC, while Alternative B sets an objective of only 50 percent. Thus Alternative B would have less potential for impact than the other alternatives.

Impacts from Vegetation—Nonforested Management

Under all alternatives, maintaining native species within nonforested vegetation could result in long-term effects on tribal uses through enhancement of native plant species and environment. Under Alternatives C and D, actively preventing off-road vehicle use in nonforested vegetation could reduce the possibility for ground disturbances in and around TCPs, ethnographic resource areas, and cultural resource sites.

Impacts from Fish and Wildlife Management

There could be long-term effects associated with enhancing culturally significant plant and animal habitat through restoration of various habitats. Short-term impacts could occur from loss of access and alterations of setting during treatment or seasonal closures. Under Alternative B there is an additional emphasis on measures to promote commodity and recreational species. These include species that have been fished or hunted traditionally, and these actions could result in a moderate enhancement of opportunities to continue cultural use. Minor short-term impacts could occur from loss of access and alterations of setting during treatment or seasonal closures.

Under all alternatives, road closures could reduce the potential for direct disturbance of TCPs and cultural resources, as well as potential vandalism and unauthorized collecting. However, the limited access could represent an impact on tribal use of and access to the same areas.

Impacts from Special Status Species Management

Under all alternatives, measures that reduce incompatible uses of specific regions in order to preserve special status species under Alternative A would have long-term effects on TCPs and on cultural and ethnographic resources by enhancing the natural resource base and general ecosystem health. Additionally, reducing the potential for ground-disturbing actions, erosion, alterations to setting, incompatible use, and vandalism could result in long-term improvements to tribal resources. Short-term impacts could result if tribes were not allowed to access TCPs or ethnographic resource areas. The action alternatives (Alternatives B, C, and D) have more specific direction for management of special status species habitat, which would increase the potential for impacts.

Impacts from Wildland Fire Management

Under all alternatives, wildland fire could directly disturb TCPs, ethnographic resources, and cultural resources by destroying or modifying them, creating long-term impacts on tribal uses. Fire could also result in impacts through erosion and the increased visibility of cultural resources and TCPs. Under the action alternatives (Alternatives B, C, and D), Rochat Divide is within a fire suitability area, and fire could directly impact the Rochat Divide TCP.

Cultural resources, traditional use areas, and TCPs flagged for fire avoidance in prescribed burns can be susceptible to unauthorized collection and vandalism, resulting in long-term permanent impacts. Prescribed burns and closure restrictions could also result in short-term impacts if tribal access to resources are limited or otherwise restrained. Fire management and suppression activities can involve major ground-disturbing activities that can also create long term or permanent impacts on cultural resources, natural resources, and TCPs.

Stipulations for fire management address a range of cultural and ethnographic resource concerns associated with wildland fire use, fire suppression, prescribed fire, nonfire treatments, and restoration activities. However, it is not possible to identify all resources, and some effects cannot be avoided.

All alternatives call for repairing or improving fire-damaged lands through rehabilitation as quickly as possible. This could limit the time tribes may be affected by the loss of ethnographic resources and culturally significant plant species.

Additionally, under the action alternatives (Alternatives B, C, and D), application of MIST in special designation areas could provide additional protection for TCPs, ethnographic resources, and cultural resources.

Compared to Alternatives A and B, direction for fire management under Alternatives C and D address a broader range of cultural and ethnographic resource concerns associated with wildland fire use, fire suppression, prescribed fire, nonfire treatments, and restoration activities, but identification of all resources is not possible, and some effects cannot be avoided. The use of fuels treatment actions and events to improve or protect noncommercial natural resources, not necessarily culturally valuable resources, could result in long-term, moderate to minor impacts by changing the availability and access to TCPs and cultural and ethnographic resources. Proper adherence to guidelines and regulations will reduce or eliminate impacts.

Impacts from Cultural Resources Management

Under all alternatives, cultural resource management measures would preserve and protect cultural resources, including TCPs, and would help ensure that they are available for Native American tribal uses. Such actions could result in long-term improvements on tribal uses. Impacts from proposed land use authorizations would be minimized or avoided by compliance with laws and executive orders designed to preserve and protect cultural resources, including TCPs. Limiting motorized vehicle use to designated roads in the Rochat Divide area would help maintain and enhance the quality of that identified TCP. Complying with management measures for authorized actions requires consulting with federally recognized tribes, which could help identify and minimize impacts on TCPs and ethnographic resources.

Additional actions under Alternative B could enhance tribal use of the planning area with the following:

- Development of a long-term monitoring schedule for and annual examinations of TCPs could provide long-term moderate effects by providing additional protection for such Native American

4. Environmental Consequences

resources. Similarly, the development of cultural heritage education programs could provide additional protection of TCPs and other Native American resources.

- Designation of no surface occupancy for leasable minerals along the Rochat Divide ridge system and developing a management plan for that area could provide specific protection and maintenance of the Rochat Divide TCP and maintain access to that location for tribes. Motorized vehicle use restricted to roads in the Rochat Divide area could help maintain and enhance the quality of that identified TCP.
- Establishing agreements with Tribes for consultation could help to protect and maintain cultural resource sites including Native American TCPs and traditional use areas.

In addition, Alternatives C and D would develop a management plan for the Rochat Divide area, which could provide specific protection and maintenance of the Rochat Divide TCP and maintain access for tribes to that location.

Impacts from Visual Resources Management

More restrictive VRM classes (VRM I and II) would protect the scenic quality and setting of TCPs, ethnographic resources, and cultural resources. The potential for impact would correspond with the number of acres designated as VRM I and II. VRM I occurs only in WSAs, and is constant across alternatives, VRM II varies: 14,312 acres for Alternatives A and B, 42,273 acres for Alternative C (a 195 percent increase over current designations), and 23,551 acres for Alternative D (a 65 percent increase over current designations).

Impacts from Livestock Grazing Management

Allowing livestock grazing could result in impacts on tribal use of those areas. Livestock grazing and trampling, watering locations, corrals, and rangeland improvement designed primarily to benefit livestock could degrade the integrity and setting of cultural and ethnographic resources through direct disturbance and erosion. Also, use of the areas by livestock could preclude Native American access. Actions that improve rangeland management could reduce the potential for these impacts. Potential for impacts would correspond with the number of acres allocated to grazing. Under Alternatives A and B, 4,004 acres would be allocated, while under C and D, only 1,218 acres would be.

Impacts from Minerals Management

Potential impacts from mineral development include the following:

- Direct ground-disturbing activities and erosion;
- Intrusions to setting;
- Access, leading to unauthorized collection or vandalism; and
- Reduction in tribal access to closed areas.

Withdrawals from operation of mining laws could limit disturbances and impacts on cultural and ethnographic resources, while maintaining Native American access to those areas. In general, such withdrawals from mineral development would have a long-term effect on cultural resources by restricting surface disturbance and potentially incompatible uses. Potential for impacts would correspond with the number of acres withdrawn. Under alternatives A and B, 5,376 acres would continue to be withdrawn. Alternative C would withdraw an additional 24,370 acres. Alternative D would withdraw only 27 additional acres compared to current management.

Impacts from Recreation Management

Increased demand and use of BLM-managed resources for recreational and motorized vehicle use can affect TCPs, ethnographic resources, and cultural resources through the following:

- Direct disturbance;
- Soil compaction;
- Altered surface water drainage;
- Erosion and intrusions to setting; and
- Potential access, leading to unauthorized collection or vandalism.

Generally, impacts will be less when more intensive management is applied through special recreation management area (SRMA) designation, than when custodially managed within the extensive recreation management area ERMA. Thus potential for impacts would correspond with the number of acres within SRMAs. Currently there are 3,249 acres within SRMAs. Alternative B would increase this to 63,927 acres. Under Alternative C, 60,866 acres are within SRMAs, and Alternative D has the most with 79,151 acres within SRMAs. Thus Alternative D would reduce impacts more than any other alternative.

Impacts from Renewable Energy Management

Potential impacts from biomass development and operations would be the same as those described under Impacts from Vegetation – Forests and Woodlands Management.

Impacts from wind energy development could include:

- Direct ground-disturbing activities;
- Erosion;
- Intrusions to setting;
- Potential access, leading to unauthorized collection or vandalism; and
- Limited tribal access to closed areas.

Potential for impacts from wind energy dependent are the same as those regarding rights-of-way and use authorizations described under Impacts from Lands and Realty Management.

Impacts from Transportation and Travel Management

OHV use can affect cultural and ethnographic resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access, possibly leading to unauthorized collection or vandalism. Off-road motorized vehicle use, including snowmobiles, could also affect tribal use of areas by disrupting or precluding cultural or religious activities. Potential for impacts would correspond with the amount of area open to off-road use (see Table 4.5.3-1 below).

Restricting vehicle use to designated routes would reduce the risk of disturbing TCPs, ethnographic resources, and cultural resource sites located off travel routes. Transportation access and maintenance of the road and trail networks can facilitate tribal access and traditional cultural uses but could also increase risk of impacts on resources by allowing public access that could lead to looting or vandalism. Area, road, or trail closures could restrict tribal access to affected portions of the planning area. These impacts would correspond with the miles of roads and trails designated, and miles of roads with seasonal or vehicle restrictions (see Table 4.5.3-1).

4. Environmental Consequences

Table 4.5.3-1 Transportation and Travel Management by Alternative

Travel Designation	Alternative A	Alternative B	Alternative C	Alternative D
Open Travel Areas (acres)	63,041	0	0	0
Closed Travel Areas (acres)	162	162	311	631
Limited Travel Areas (acres)	33,567	96,608	96,459	96,139
Designated Roads/Trails (miles)	27	282	122	175
Roads/Trails with Seasonal or Vehicle Restrictions (miles)	14	113	69	68
Open to Off-road Snowmobile (acres)	66,949	64,157	0	63,373

Impacts from Lands and Realty Management

The retention of existing, or acquisition of new land with TCPs, ethnographic resources, and cultural resource sites would provide for long-term federal protection and could enhance currently managed resources by consolidating holdings. Conversely, exchange or adjustment of such lands would permanently remove federal protections for resources and the opportunity to exercise tribal treaty rights in the future. The removal of federal protections is an impact under the NHPA, which would be addressed and resolved in the Section 106 process prior to adjustment. BLM would consider impacts on significant cultural resource sites and areas of importance to Native Americans, such as ethnographic resources and TCPs prior to adjusting any lands. While consultation with Native American Tribes is standard procedure when considering land exchange or adjustment, the action alternatives add more emphasis by specifically requiring such consultation.

ROW use authorizations would have potential to allow uses that may be incompatible with the preservation of cultural and ethnographic resources and maintenance of TCPs or could hinder tribal access. Current management does not specify any specific restrictions on ROW authorizations or use permits. However, Alternative B identifies 21,636 acres of ROW exclusions, in which issuance of use authorizations would not be allowed, and 23,586 acres of ROW avoidance areas, in which authorizations would only be allowed when there was no other practical location. Alternative C identifies 21,819 acres of ROW exclusions and 46,273 acres of ROW avoidance areas. Alternative D identifies 22,069 acres of ROW exclusions and 13,688 acres of ROW avoidance areas.

Impacts from Special Designations Management

Special designations and area-specific management plans can directly or indirectly provide long-term protection of tribal access, TCPs, ethnographic resources, and cultural resource sites by restricting incompatible uses. Development of new recreational activity areas, such as NRTs, can affect tribal use of TCPs, ethnographic resources, and cultural resource sites by direct disturbance, intrusions to setting, and public access that could lead to unauthorized collection or vandalism.

Alternative A: Hideaway Islands ACEC/RNA (76 acres) and Lund Creek ACEC/RNA (2,905 acres) would be managed in a nondestructive and nonmanipulative manner to protect their unique resources. This could maintain the natural setting of those areas and any cultural or ethnographic resources located in those areas. Lund Creek RNA falls completely within the Grandmother Mountain WSA, where activities that could cause impacts are already not allowed. Thus, designation of the Lund Creek RNA would have no effect, unless the WSA was released by Congress. Indefinite protective management of five stream segments, totaling 28 miles (3,495 acres of protected lands within 1/4 mile of these segments), which are eligible for Wild and Scenic River designation would maintain and protect the natural resource base of those areas, preserving and enhancing current tribal uses of those areas. However, eligible segments include 14 miles of the Kootenai

River, along which BLM has only scattered ownership (less than 500 acres within the 1/4 mile buffer). Of the remaining protected corridors, all but about 300 acres fall within the Grandmother Mountain WSA, which is already protected. Thus, protection of eligible segments would have little impact, unless the WSA was released by Congress.

Alternative B: Designation of Hideaway Islands and Lund Creek as ACEC/RNAs would have the same impact as described under Alternative A. However, Alternative B identifies all eligible Wild and Scenic River segments as nonsuitable. Therefore they would not receive special management attention. Although this designation would provide extended federal protection of the tribal value and cultural resource sites of the Rochat Divide area, the increased public knowledge of the area and its location could represent an impact on tribal use of that TCP through increased public access that could lead to vandalism or looting, ground disturbances, erosion, and changes in setting.

Alternative C: This alternative would protect existing water quality through designation of 19 additional ACECs, totaling an additional 23,275 acres. However, 18,065 of these additional acres are within the Crystal Lake and Grandmother Mountain WSAs, so no additional protection would truly be afforded. Cultural and scenic values of the Rochat Divide TCP area (outside of Crystal Lake WSA) would be protected through designation as an ACEC and specific resource protection measures. Although these designations would provide extended federal protection of the tribal value and cultural resource sites of the Rochat Divide area, the increased public knowledge of the area and its location could represent an impact on tribal use of that TCP through increased public access that could lead to vandalism or looting, ground disturbances, erosion, and changes in setting. Also, all five eligible Wild and Scenic River segments were found suitable under this alternative, affording them the same protection as under Alternative A.

Alternative D: This alternative designates three additional ACECs and makes boundary adjustments on Lund Creek RNA, totaling an additional 377 acres of ACEC/RNAs (all outside of WSAs) compared to current management. These designations would afford a corresponding slight increase in protection of tribal uses. Wild and Scenic River segment protection is identical to Alternatives A, and C, with four suitable and one eligible segments.

Impacts from Social and Economic Management

Public Health and Safety

Under all alternatives, actions taken to protect the public from hazards such as the removal of historic structures or removal of hazardous materials may affect the integrity of cultural resources by their removal or by ground disturbances. Tribal use of those resources could also be affected by their removal or other alterations. Tribal access could be restricted during cleanup activities. However, inventorying AML could provide a better understanding of the cultural resources within the planning area, thereby enhancing protection of cultural resource sites. Under the action alternatives (Alternatives B, C, and D), consideration of the State and Tribe's Coeur d'Alene Lake Management Plan during recreation planning around Coeur d'Alene Lake could ensure that tribal concerns for that area are considered in the planning process, maintaining tribal use of and access to that area.

4.5.3.3 Cumulative Effects

Alternative A: Under Alternative A, the management of the CdA FO would remain the same, but the above listed actions would continue to occur. Although tribal treaty rights and use of BLM public lands would remain the same under current CdA FO management, the rights of the four tribes with interests within the

4. Environmental Consequences

CdA FO to retain access to and use of resources on public lands within their original territory could be affected by many of the above listed actions. In addition to the cumulative effects discussed below, cumulative effects on cultural resources and the natural/biological resource base used by the tribes are considered effects on tribal use as well.

Access and use of natural and cultural resources on public lands could be limited by land tenure adjustments that reduce public land holdings, wildland fires and suppression techniques, and increases in mineral development. Similarly, the expected increase in private landownership could make tribal access to portions of northern Idaho increasingly difficult. Increased road construction could improve access, but also contribute to public access that could lead to increased vandalism and looting. The decrease in demand for livestock grazing permits could open areas to tribal use and allow better tribal access to culturally significant resources. Continued tribal coordination efforts and local management plan revisions could insure tribes retain or gain access to culturally significant areas.

The availability of ethnographic resources could be affected by limited access as well as fluctuations in species populations. Wildland fires, plant diseases and insect infestations, noxious weed invasions, increases in human populations, projected declines in native trout populations, and limited and poor water quality streams could reduce the number of plant and animal species available for hunting and collecting for cultural purposes. Similarly listing new species under the Endangered Species Act and increasing federal and state agency conservation efforts could further limit the availability of such ethnographic resources, especially for those tribes without specific treaty rights to hunt or collect those species. However, the expected decline in or continued demand for livestock grazing permits, timber harvesting, and mining development combined with the continued tribal coordination efforts and revised regional management plans could balance these effects by improving the natural resource base used by the tribes and preserving or returning ethnographic resource areas for tribal use.

TCPs and other culturally significant areas could also be impacted by increased size and occurrence of wildland fires, fire suppression techniques, fuels treatment programs, changes in the natural resource base brought about by insect and disease activity, invasive noxious weed species, or other regional management plans, road construction, increases in human populations and demand for recreation opportunities. Such actions could increase the likelihood for tribal access to TCPs to be temporarily impeded, the setting of TCPs and other cultural sites are disrupted, vandalism at TCPs and culturally significant areas, ethnographic resources to be reduced or removed from traditional areas, and ground disturbances that could eliminate traditional areas or impact the integrity of TCPs. However actions, such as the development of regional management programs and the projected reduction in livestock grazing, timber harvesting, and mining, that restore or improve the natural resource base around TCPs or culturally significant areas could improve the setting of such locations and enhance their use. Continued tribal coordination efforts could continue to insure protection of specific areas from the above impacts.

Alternative B: Under Alternative B, cumulative effects on Native American tribal uses would be similar to Alternative A, but with increased risks that may limit tribal access, degrade ethnographic resources and natural resources used by the CdA FO tribes, and impact the integrity and setting of TCPs and traditional use areas. This increased risk would be caused by the focus of Alternative B on developing economically viable resources.

Alternative C: Under Alternative C, cumulative effects on Native American tribal uses would be similar to Alternative B, with similar increased risks that may limit tribal access, but less risk of degradation of

ethnographic and natural resources and impacts on the integrity and setting of TCPs and traditional use areas. This increased risk would be caused by the focus of Alternative C on preserving and protecting natural resources.

Alternative D: Alternative D would balance the cumulative effects on Native American tribal uses under Alternatives B and C. Tribal access would be limited in some areas and more open in others due to implementation of Alternative D. Similarly ethnographic resources, TCPs, other culturally significant areas, and the natural resource base and ecosystem used by the tribes could experience improvements and impacts. The increased efforts for tribal consultation and input, compared to Alternative A, would insure this balance is maintained, specific areas of concern are addressed in the appropriate manner, and tribal access to areas and ethnographic resources is considered.

4.6 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are impacts that remain following the implementation of mitigation measures, or impacts for which there are no mitigation measures. Some unavoidable adverse impacts would occur as a result of proposed management under one or more of the alternatives. Others are a result of use of public lands within the planning area. Development of mineral resources could create visual intrusions, soil erosion, compaction problems, loss of vegetation cover, and damage or destruction of cultural resources. Unauthorized off-road vehicle travel could cause scarring, increased soil erosion, and loss of vegetation cover. Wildland fire use could result in changes to the scenic quality of the landscape, the loss of habitat, and the loss of undiscovered cultural and paleontological resources. Vegetative treatments could cause displacement of wildlife, decreases in quantity and quality of forage, and loss of nontarget ecosystem components. Changes in the amount of recreational visitation and patterns of use could result in increased conflicts between users, vandalism, illegal collection of cultural resources, and unanticipated changes in resource conditions. Proposed restrictions on recreation, livestock operations, and other land use authorizations to protect sensitive resources and other values would lessen the ability of operators, permittees, individuals, and groups to use the public lands and could increase operating costs. Accidental or unauthorized introduction of exotic plant or animal species could result in harm or loss of populations of native plants or animals. Ecosystem components could be impacted if FRCC 2 and 3 areas are not treated prior to a high intensity wildland fire. If fuels are not treated the risk of loss to life and property is higher as rural growth expands the wildland-urban interface. Virtually all potential unavoidable adverse impacts are indirect, long-term, and difficult to quantify.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretreivable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretreivable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., loss of special status species habitat or the disturbance of a cultural resource).

Mineral development would result in an irreversible loss of vegetation resources, habitat, and wildlife and livestock forage. Reclamation of disturbed areas would reduce the magnitude of these impacts following the action, but changes in migration patterns and displacement of local populations during the activities could cause an irreversible loss in localized wildlife populations. Irretreivable losses to visual characteristics near mining sites would occur during development and operation.

Each alternative could result in irretreivable loss of timber or other forest products due to wildland fire, insects and disease, or harvesting. Both activities would result in the long-term loss of these resources, although they would eventually be available again, so they are not irreversible. Road construction for timber management may cause an irreversible loss in wilderness character, and special designations that restrict commercial harvesting would cause an irretreivable commitment of the forest products resource.

Without vegetation treatments noxious weeds or invasive species may not be reasonably eradicated, resulting in an irreversible change in ecosystem health. Likewise, lands could further degrade, resulting in an irreversible loss in ecological functionality.

There would be no irretreivable or irreversible impacts on recreational resources if management restrictions were implemented effectively. Under Alternative A, where most of the CdA FO remains open for OHV use, there could be an irreversible impact on passive or wilderness experiences if OHV use continues to grow.

Undiscovered cultural resources may be affected by the alternatives. Compliance with management measures requires consultation with affected communities, the identification and evaluation of cultural resources, and adherence to procedures for resolving any adverse effects and mitigating impacts. Cultural resources are by their nature irreplaceable, so the alteration or elimination of any such resource, whether National Register-eligible or not, represents an irreversible and an irretreivable commitment.

The exact nature and extent of any irreversible and irretreivable commitment of resources cannot be defined due to uncertainties about location, scale, timing, and rate of implementation, as well as the relationship to other actions and the effectiveness of mitigation measures.

4.8 RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT TO LONG-TERM PRODUCTIVITY

Section 102(C) of NEPA requires a discussion of the relationship between short-term uses and long-term productivity of resources. Forest products would be the primary use that could affect long-term productivity in the planning area. As described in Section 4.3.1.2, proposed vegetation treatments would remove between three and 23 percent of the growth on available acres over the next 15 years. Since growth would greatly exceed removed products, there would be little effect on long-term productivity.